WESTERN GAS

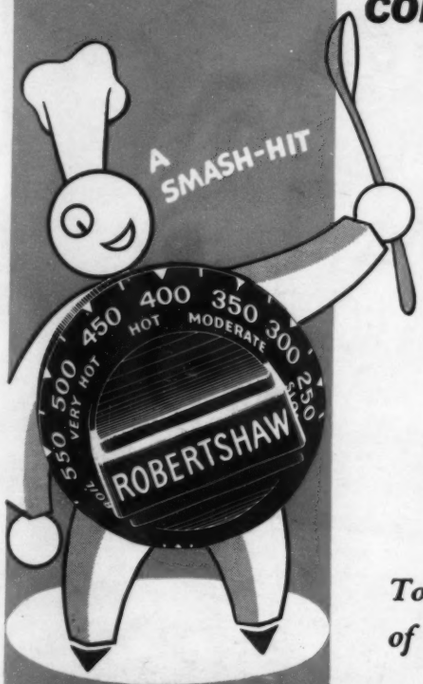
APR 10 1936
PERIODICAL DIVISION

CURTAIN GOING UP!

ON THE BIGGEST SHOW EVER STAGED BY

ROBERTSHAW

TO SELL ROBERTSHAW OVEN-HEAT-CONTROL-EQUIPPED RANGES



COMING! COMING! COMING!

MAY 4TH TO 9TH

A NATION-WIDE, NATIONALLY-ADVERTISED

MEASURED COOKING WEEK

To sell women the country over on the advantages of oven-heat-control—to put Robertshaw-equipped modern gas ranges squarely in the spotlight

Come in! Come in!

EQUIP YOUR RANGES WITH ROBERTSHAW *OVEN-HEAT-CONTROL*

Brilliant showmanship by Robertshaw! World's first Measured-Cooking Week! National advertising that will put your Robertshaw-equipped range in top-spots on every main stem in the country! Don't miss this big selling drive! Write for details!

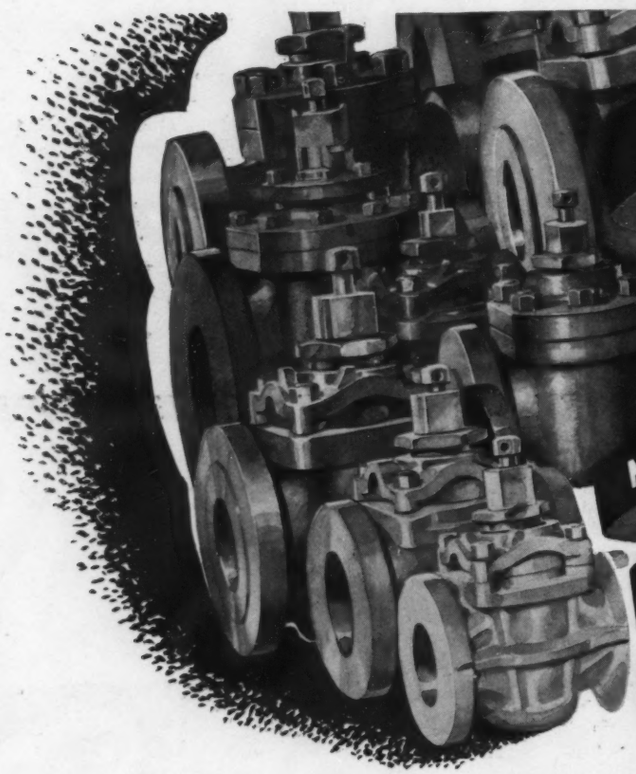
ROBERTSHAW THERMOSTAT COMPANY
YOUNGWOOD, PENNA.

ACT 1 *Presenting* a campaign in Collier's, featuring Measured-Cooking Week, dramatizing Robertshaw's big role in modern cookery

ACT 2 *Presenting* a big $1,000.00 prize-contest to home service directors for best one-week demonstrations on Robertshaw-equipped gas ranges

ACT 3 *Presenting* a big newspaper mat service urging gas company customers to come and learn better cooking—on Robertshaw-equipped ranges

ACT 4 *Presenting* a complete newspaper mat service planned to bring prospects in to retailers during Measured-Cooking Week



STOP CORROSION

METALS FOR EVERY SERVICE

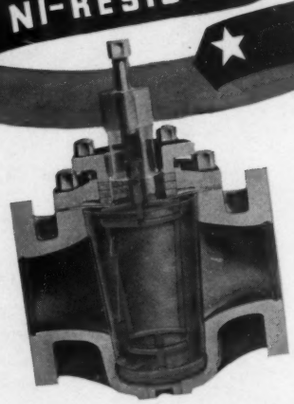
- STAINLESS STEEL
- MONEL METAL
- CAST STEEL
- MEEHANITE
- MERCO BRONZE
- MERCOLOY
- ALUMINUM
- ALUMINUM BRONZE
- SEMI-STEEL
- NI-RESIST

NORDSTROM VALVES
Control corrosion

Special alloys in combination with patented "Sealdport" lubrication in Nordstrom Valves offer the highest resistance to corrosion and erosion set up by extreme ranges in pressure, temperature and gas. Nordstrom research laboratories are constantly alert to the new conditions imposed on valves. Anticipating every conceivable demand, special alloy metals have been completely tested for specific services. Our engineers are prepared to make recommendations for the most suitable type of metals to meet your needs.

NORDSTROM *Lubricated* **PLUG VALVES**

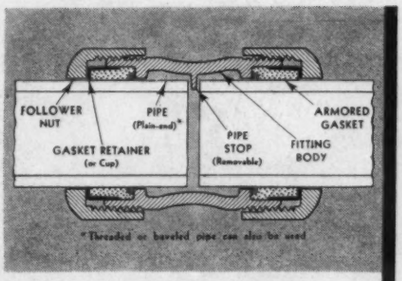
WITH PATENTED "SEALDPORT" LUBRICATION



MERCO NORDSTROM VALVE CO. *A Subsidiary of* **PITTSBURGH EQUITABLE METER CO.**

Branch Offices: New York City, Buffalo, Philadelphia, Columbia,. Memphis, Atlanta, Chicago, Kansas City, Tulsa, Houston, Los Angeles, Oakland

Compact! Self-Contained!



HOW THE DRESSER "65" WORKS

● Two *Threaded Follower Nuts,* when screwed up on the *Fitting Body,* compress an *Armored Gasket* tightly around the *Plain-End Pipe* with tremendous force, giving a positive seal under all conditions. A *Gasket Retainer* (or Cup) acts as a housing for, and protects, each gasket. On the inside of the Fitting, a *Pipe Stop* centers the pipe-ends inside the Fitting; this stop may be easily knocked out to slide the Fitting along the pipe like a sleeve (for repair work, etc.).

The above coupling is from the new and complete line of Dresser Compression Fittings, now available. Installation is remarkably simple. Just slip the pipe-ends into the Fitting (which comes assembled) and then tighten! Result—a positive seal, *absolutely tight.* Plain-end pipe is used (threaded or beveled pipe is suitable, too).

The Dresser *flexible* "floating grip" absorbs pipe movements and stresses; permits pipe deflections. The new Compression Fittings come in sizes ⅜" to 2" I.D. and include standard and extra-length Couplings, 45° and 90° Ells, Tees, etc. *Write for Folder No. 361.*

S. R. DRESSER MANUFACTURING CO., BRADFORD, PA.

In Canada: Dresser Mfg. Company, Ltd., 32 Front St., West, Toronto, Ont.

DRESSER *COMPRESSION* FITTINGS *Style 65*

ADVERTISERS' INDEX

The American Brass Company 39
American Meter Company 8
American Gas Products Corp. 37
American Stove Co. —

The Barber Gas Burner Co. 61
Barber-Greene Company 54
The Barrett Company 3
H. R. Basford Company 54
Blaw-Knox Company 55
The Bristol Company —

The Cast Iron Pipe Research Assn. Back Cover
The Chaplin-Fulton Mfg. Company 44
Colonial Shops 60
Connelly Iron Sponge & Governor Co. 58
The Cooper-Bessemer Corporation 6
Cribben & Sexton Company 31

Daniel Orifice Fitting Co. 62
Dearborn Chemical Company 60
Detroit-Michigan Stove Co. 35
S. R. Dresser Manufacturing Co. 1

Electrogas Furnace & Mfg. Co. 55
Electrolux Refrigerator Sales, Inc. 22, 23
Ensign Carburetor Company, Ltd. 56
The Estate Stove Company —

Fisher Governor Company, Inc. —
Fluor Corporation, Ltd. 27
Fraser Furnace Company 54

General Ceramics Company 56
James Graham Manufacturing Co. 63
Greenlee Tool Co. 59

Handbook Butane-Propane Gases, 2nd Edition 48
The Hotstream Heater Co. 49

Inland Manufacturing Company 52

Johnson Gas Appliance Co. 62

Kerotest Mfg. Co. 48

Merco Nordstrom Valve Co. 2nd Cover
Minneapolis-Honeywell Regulator Co. 29
Mueller Co. 3rd Cover
L. J. Mueller Furnace Co. 25

The National-Superior Co. 5
National Tube Company —
Natural Gas Equipment, Inc. 59
Nemec Combustion Engineers 56
The New Deal Specialty Co., Inc. 4

Pacific Coast Gas Association, Inc. 50
Pacific Gas and Electric Company 53
Pacific Gas Radiator Campany 58
Payne Furnace & Supply Co. 62
Peerless Manufacturing Corporation —
Pittsburgh Equitable Meter Co. 2nd Cover
Porcelain Enamel Institute, Inc. 63
Pressed Steel Tank Company 47

Reliance Regulator Corp. 42
Republic Steel Corporation 41
Reynolds Gas Regulator Co. 61
Robertshaw Thermostat Company Front Cover
Geo. D. Roper Corporation —
Ruud Manufacturing Co. 33

Safety Gas Main Stopper Co. 56
The Sharples Solvents Corp. 45
Spencer Thermostat Company 54
The Sprague Meter Company 48

The Texacone Company 64

United States Pipe and Foundry Co. 54
United States Steel Corp. —

Ward Heater Co., Ltd. 62
Welsbach Company 57
Worthington Pump and Machinery Corporation 49

WESTERN GAS

"Reg. U. S. Pat. Off."

Publication Office: 810 South Spring Street, Los Angeles, Calif.—Phone Michigan 1481
District Office: 1064 Peoples Gas Building, Chicago — Phone Harrison 8536

JAY JENKINS, Publisher GEORGE H. FINLEY, Editor CRAIG ESPY, Mid-Western Manager
ANATOL FOMILYANT, News Editor W. G. RUSSELL, Field Representative

Contents for April, 1936

GUEST EDITORIAL: "Let's Rationalize This Holding Company Issue!" 7
By John J. O'Brien

Review of the Month 9

"The Heat Wave"—A Distribution Department Load-Building Project . . . . . *By R. C. Terradell* 10

Chain Store Taxes—and How They Concern Appliance Merchandising . . . . . *By Douglas G. McPhee* 11

Results in Plumber Cooperation . . . . *By C. H. Light* 12

The Heating System (No. 4 in a Series) . . *By B. A. Johnson* 13

Pacific Coast Gas Association Spring Conferences 16
Accounting and Sales and Advertising Sections 16
Technical Section 18

On to Dallas . . . May 5-8 20

Sales Sessions at New Orleans Reviewed 28

Welding Technique Surveyed at Lubbock . . *By Ed McKeever* 34

MEASUREMENT AND CONTROL 43
The Intermediate Pressure Device . . *By Gurney B. Reece* 43

BUTANE-PROPANE NEWS 46

April, 1936. Volume XII, Number 4. WESTERN GAS is published monthly by Western Business Papers, Inc., at 810 South Spring Street, Los Angeles, California. Subscription price (in advance), 25 cents the copy; $2.00 per year; 2 years, $3.00; $3.00 per year foreign. Entered as second class matter June 1, 1925, at the postoffice at Los Angeles, under the Act of March 3, 1897. Copyright, 1936.

OFFICIAL PUBLICATION: Pacific Coast Gas Association; Southern California Meter Association

MEMBER: Audit Bureau of Circulations; Associated Business Papers, Inc.

Reproduction of the micrograph above shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent, they give Barrett Pipe Line Enamels unusual toughness and resistance to soil stresses.

For pipe of large diameter, The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

Courtesy Lone Star Gas Company

Barrett

PIPE LINE ENAMELS

The result of a lifetime of waterproofing experience

To the problem of pipe line protection, The Barrett Company brought a lifetime of knowledge and experience in the use of coal-tar pitch for waterproofing tunnels, dams, subways and all types of underground structures. The result was the development of scientifically correct pipe line enamels that have since proved their effectiveness and efficiency in actual application. Wire or write for complete information.

THE BARRETT COMPANY, 40 Rector Street, New York, N. Y.

FIELD SERVICE

Carefully trained Barrett field men will gladly work with you, combining their special knowledge and experience with your familiarity with conditions along the right of way.

Introducing the "NEW DEAL"

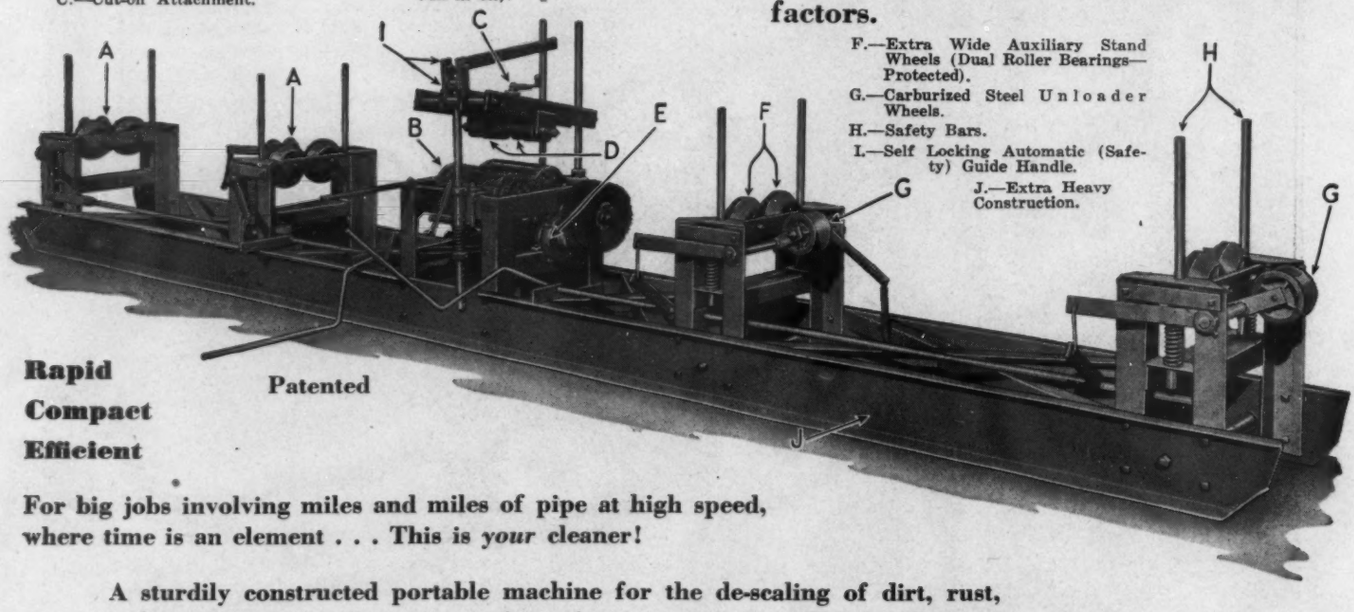
"HI-SPEED" MODEL PIPE CLEANING MACHINE

(The Complete Machine)

WITH MANY NEW FEATURES

Specially built for big jobs—where speed, low cost per foot of cleaning and minimum parts requirements are factors.

A.—Double Loader Wheels.
B.—Bevel to lift collars or weld onto Cleaning Blades.
C.—Cut-off Attachment.
D.—Double Dual High-Speed Guide Rollers.
E.—Dual Brush-Gear Driven (Gears run in oil).
F.—Extra Wide Auxiliary Stand Wheels (Dual Roller Bearings—Protected).
G.—Carburized Steel Unloader Wheels.
H.—Safety Bars.
I.—Self Locking Automatic (Safety) Guide Handle.
J.—Extra Heavy Construction.



Rapid
Compact
Efficient

Patented

For big jobs involving miles and miles of pipe at high speed, where time is an element . . . This is *your* cleaner!

A sturdily constructed portable machine for the de-scaling of dirt, rust, scale and corrosion from the surface of pipe and casing. Will handle pipe from 2" up to 13⅜" OD. Write for illustrated folder.

GREATER SPEED—MORE POWER—GREATER CAPACITY
DUAL LOADERS AND DUAL UNLOADERS
HEAVIER CONSTRUCTION THROUGHOUT
DUAL BRUSH, GEAR DRIVEN. GEARS RUN IN OIL
COMPLETE WITH POWER—(GAS—GASOLINE OR ELECTRIC)
CUTTING OFF ATTACHMENT

For Pipe Lines and Gas Companies . . .

This machine is the result of Two Years Engineering Research and Field Tests.

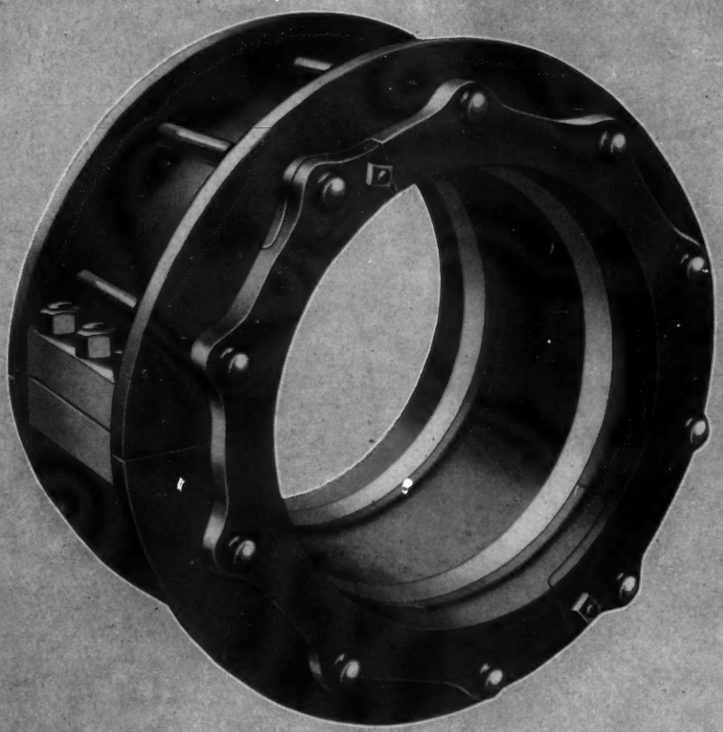
Our own representatives will personally supervise installation and train your crew to handle anywhere in United States or Canada without additional charge. These special models built only on order and guaranteed.

The NEW DEAL SPECIALTY CO., Inc.

P. O. Box 911 OKMULGEE, OKLA. Phone 2078—L. D. 14

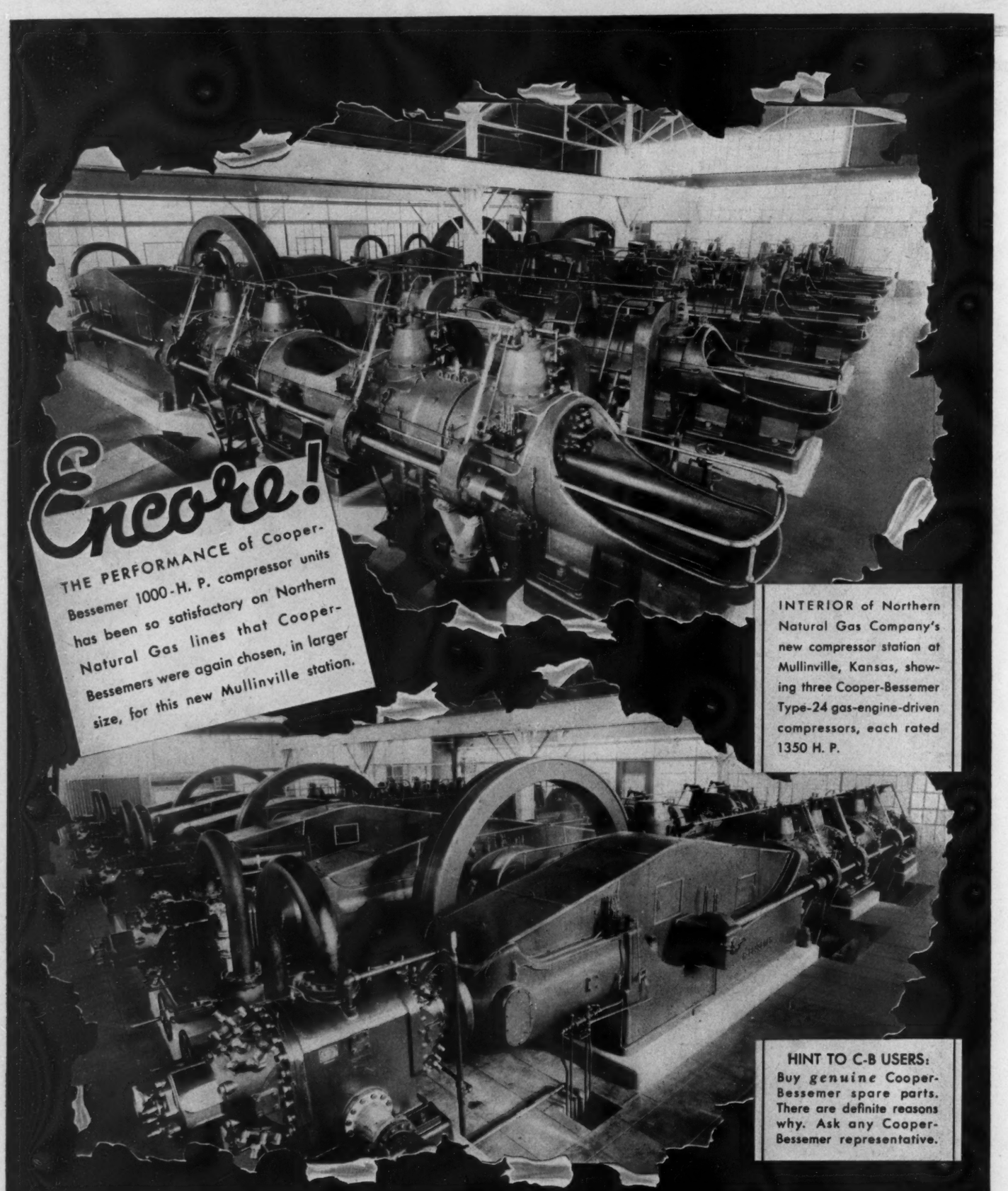
Export:
Lucey Export Corporation, 3505 Woolworth Building, New York, N. Y.
Broad Street House, London, E. C. 2, England

DAYTON NO. 8½ SPLIT SLEEVES (ERMAL)



Constructed of high grade malleable iron, it is unexcelled for repairing broken welds on high pressure mains.

THE NATIONAL SUPERIOR CO.
DAYTON PIPE COUPLING DIVISION DAYTON·OHIO



Encore!

THE PERFORMANCE of Cooper-Bessemer 1000-H. P. compressor units has been so satisfactory on Northern Natural Gas lines that Cooper-Bessemers were again chosen, in larger size, for this new Mullinville station.

INTERIOR of Northern Natural Gas Company's new compressor station at Mullinville, Kansas, showing three Cooper-Bessemer Type-24 gas-engine-driven compressors, each rated 1350 H. P.

HINT TO C-B USERS: Buy *genuine* Cooper-Bessemer spare parts. There are definite reasons why. Ask any Cooper-Bessemer representative.

THE COOPER-BESSEMER CORPORATION

640 East 61st Street . . . . . Los Angeles, California

PLANTS — Mount Vernon, Ohio — Grove City, Pennsylvania

WESTERN GAS

APRIL, 1936

Guest Editorial

Let's Rationalize This Holding Company Issue!

By JOHN J. O'BRIEN

President, Standard Gas and Electric Company

THE GAS industry seems to be in slightly better favor than the electric industry at present, no federal "yardsticks" having yet been established to present to the public a picture of contrasting motives—government beneficence on the one side, private industry's alleged selfishness on the other. The bureaucrats seem to be not quite as covetous of the gas industry as of the electric, so are at less pains to discredit it. Perhaps this is because there is more imaginative appeal, for political elocutionary purposes, in a service carried over high lines than in one transported through underground pipes.

On the whole, however, the gas industry bears its share of the gloom that has been cast over the utility industry in general. Its guilt has been adjudged equally as heavy as that of the electric industry in the blanket indictment of holding companies. For the investigating commissions, having discovered certain evils in certain holding companies, have solemnly and loudly pronounced all holding companies, in their entirety, an out and out evil.

It is hard to conceive how anyone familiar with the steady and swift progress of both the electric and gas industries could indiscriminately condemn the system of organization, finance and management under which this has been achieved. Should accomplishment not be the final measure of worth?

It is true that in the past extraordinary demands for expansion and development led to creation of opportunistic methods of financing. Hastily conceived and complicated set-ups were one result of this. These served the immediate purpose of speeding construction projects. That need past, simplification is now extremely desirable. No utility executive has any argument against simplification of corporate structure, so long as it is carried out in well considered, systematic and orderly fashion, with full regard for the rights of customers, employees and investors.

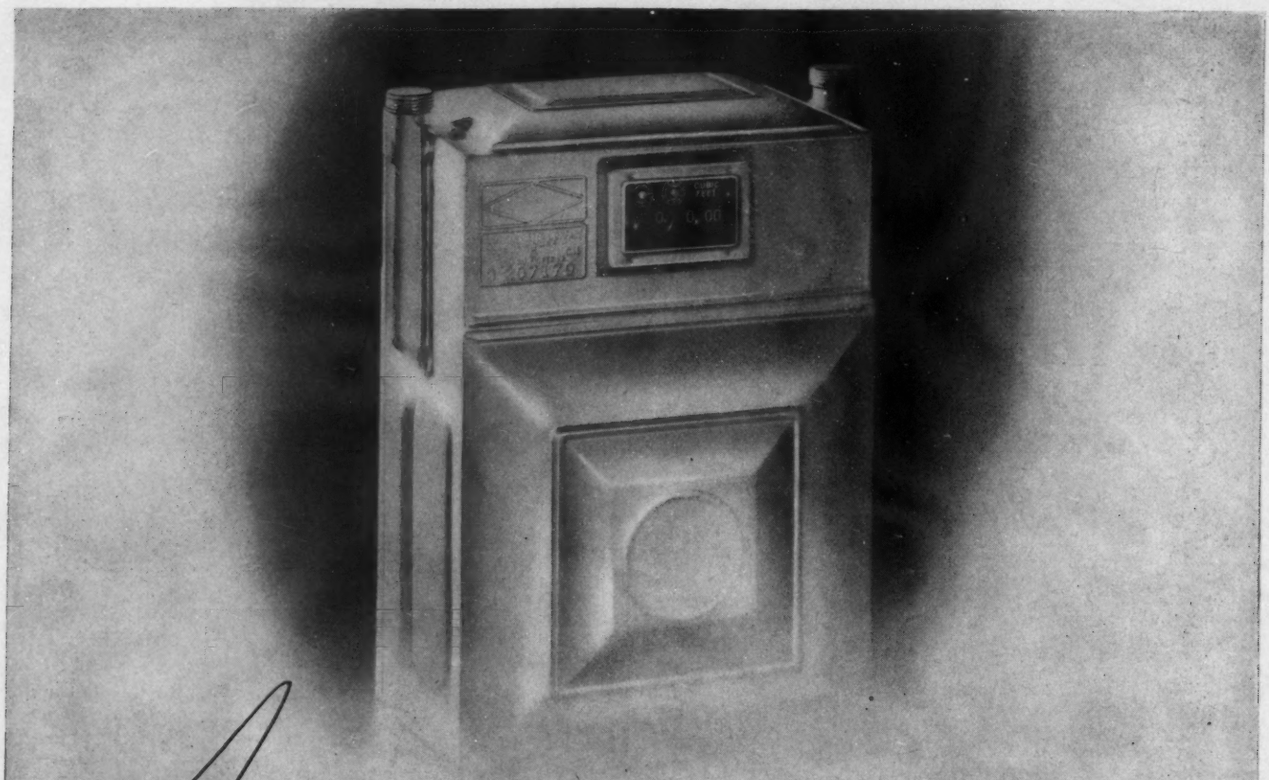
If it be granted that the utilities in their period of most rapid development demonstrated, in setting up their organizations, that haste made waste, what except irreparable damage could follow flouting of the same adage in the simplification process? There was justification for haste in the formative days of the industry; now it is wiser to proceed with caution, or much of the good that has been accomplished will be undermined by over-eagerness to tear out a few weak girders.

Overworking of a good device, not adoption of a bad one, was what brought the holding company into disrepute. It is important to remember this. Although the term is somewhat of a misnomer, inadequately and incorrectly defining the functions of most such companies, holding companies merit, on the whole, a vigorous defense.

In the gas industry, as well as in the electric, there is an adventurous spirit, a conviction that past progress is as nothing to what the future holds, that is the fruit of the banding together for greater effectiveness of many operating situations and many trained minds. Pooling of experience, of knowledge, of skill and of dynamic energy has made complete utility systems much greater instruments of progress than would be produced through simple addition, without unity, of their integral parts.

The advantages in dollars and cents of large scale purchasing, group financing, group insurance, group engineering, advertising and many other important factors, are great, but greater than these, in my estimation, is the tremendous vitality which grows from the accumulation of wide experiences and broad viewpoints gained in operation of a large utility system. "Geographical integration" to which the holding company bill proposes to limit systems is not only annoyingly indefinite, but it presupposes the desirability of a similarity of operating conditions throughout a system, whereas the greater the variety of communities served, the more protection is afforded from an investment standpoint, and the more stimulation is given the development of ideas for improving service and for new applications of service.

If the gas industry consisted wholly of isolated units, or small groups of units, I believe it would have long ago retreated to a minor position before the spectacular advance of electricity. Not even a strong trade association could have saved it. With large scale management and financing—through holding companies—it has found new uses for its service faster than old ones have disappeared. Increasing competition only challenges it to find still more applications. The future of gas is much brighter than it was before electricity appeared on the scene, even though its use as an illuminant is now negligible. In fact, the healthy state of this industry is to my mind proof that it has been well served by the device commonly referred to as the holding company.



Accuracy

". . . . it represents our base point of reference in considering meter performance. The meter stands as sole arbiter of the customer's and company's interests. Accurate equipment imposes a fair charge on the customer and yields a corresponding revenue to the company. In the event of a dispute, correct meter registration is a most effective agent in the hands of the company. The meter continuously resides on the customer's premises, and monthly it touches his pocketbook. In the fullest sense it is the outpost of public relations."

From "Factors and Trends in Meter Maintenance", a paper presented before the A. G. A. Distribution Conference at Cleveland, Ohio, May 2-4, 1935.

AMERICAN METER COMPANY
INCORPORATED
Measurement and control of Gas, Oil, Steam, Air and Liquids
GENERAL OFFICES: 60 EAST 42nd STREET, NEW YORK, N. Y.

AMERICAN METER CO. MEASUREMENT ENGINEERS
CENTENNIAL
1836-1936

341

April, 1936

WESTERN GAS

"Reg. U. S. Pat. Off."

Vol. XII, No. 4

LOS ANGELES—810 South Spring Street . . . . . 1064 Peoples Gas Building—CHICAGO

"The National Power Economy"

AFTER reading the 62-page program recently issued for the Third World Power Conference, several questions present themselves to those whose economic convictions lie on the side of private ownership in industry. The Conference is dated for September 7-12 at Washington, D. C., and its organization rests with the American National Committee which has for its chairman Harold L. Ickes, Secretary of the Interior.

It is next to impossible to examine the Conference prospectus without prejudice, because of the National Committee membership list which appears in its first pages. Chairman of the executive committee is Morris L. Cooke, administrator of the Rural Electrification Administration. Joel David Wolfsohn of the National Power Policy Committee is executive secretary. On the executive committee of 19 members are eight representing national government agencies; one state power authority member; one educator; five who classify as consulting engineers, engineering firms, or suppliers of equipment; and four private utility representatives. Among the 66 individual members of the general committee are 19 from government agencies, and a score of others who are on record as public ownership advocates. Represented, too, are nine of the larger privately owned utility systems.

In this Third World Power Conference program the emphasis has been shifted from the technical side—which got the play in previous Conferences—to "problems of the relations of power resources, their development and use to the social and economic interests of the nation." General subject theme announced for the Conference is "The National Power Economy."

Under this main head subjects to be discussed are broken into seven fields as follows: (1) Physical and statistical basis; technical, economic, and social trends. (2) Organization of fuel industries and of gas and electric utilities. (3) Public regulation. (4) National and regional planning. (5) Conservation of fuel and water resources. (6) Rationalization of distribution. (7) National power and resources policies.

The 18 separate papers dealt with in the program cover electric, gas, petroleum and coal industries and resources. The approach suggested for authors is designed to bring out social implications as well as economic.

In all fairness it may be said that much good can come from the Conference, under the program outlined, providing that the record is open for all the facts, without their distortion to serve special purposes. However, if those in immediate charge exert themselves to shape the Conference along certain lines it is easily conceivable that a prejudiced showing could be made for public ownership or at least for close regimentation of the fuel resource industries. To push the thought a bit further, the Conference *might* be moulded into a piece of glorified propaganda for the Rooseveltian "system";—not so hard to imagine, with elections due in November. A phrase from the program foreword stating that the Conference is intended to "appeal to the layman as well as the engineer" supports this possibility.

On the other hand, some of the papers call for discussion on both sides of controversial themes. To illustrate, that on publicly owned electric and gas utilities requests authors to compare data on publicly and privately owned plants; it asks for statements on the extent to which standard accounting and report systems are required, and whether publicly owned utilities are required to make offset in their accounts for taxes they would pay if they were private; also whether their rates and services are subject to regulation by any other public body.

These are points which need an airing, and their free discussion could do nothing but good for the cause of private utilities.

We hope sincerely that our fears are unjustified, as to the trend which this Third World Power Conference may take under the handling of a government-influenced American National Committee. It would be something of a travesty to see a nation in which private initiative and ownership has brought utility service to a world peak, sponsoring a Conference which encouraged socializing of power resources and service facilities.

Interstate Regulation Proposed

CONGRESSMAN LEA of California on March 6 introduced H. R. 11662—a bill cited as "The Natural Gas Act"—now in the hands of the Committee on Interstate and Foreign Commerce. The bill confines itself largely to the transportation of natural gas in high pressure mains in interstate commerce, and in the language of its author "attempts to avoid any effort to exercise what is regarded as doubtful constitutional authority." The Federal Power Commission is proposed as the body to administer it.

This proposed legislation sets up no provisions for regulation of production, local distribution, or sale for industrial purposes only. It contains no common purchaser or common carrier provisions, nor does it require divorcing of natural gas and electric operations of the same company.

The bill does provide for regulating rates and charges, prohibiting undue preferences in rates and services, and requiring extensions and improvements in services under certain conditions. It empowers the Commission to set up a depreciation accounts system for companies under its jurisdiction. It limits natural gas company officers in dealing in their own company securities and prohibits interlocking directorates except by permission of the Commission.

National Advertising Goal Reached

NATIONAL advertising for gas—proposed many times but never achieved—went over the top last month. Herman Russell, chairman of the committee appointed at the A. G. A. October convention, announces that the quota of 70 per cent of the nation's gas meters has now been exceeded, assuring a $500,000 annual fund for the first year's effort. Next step is the selection of advertising counsel, following which a committee will be named representing the participating companies, to collaborate with the agency on campaign details.

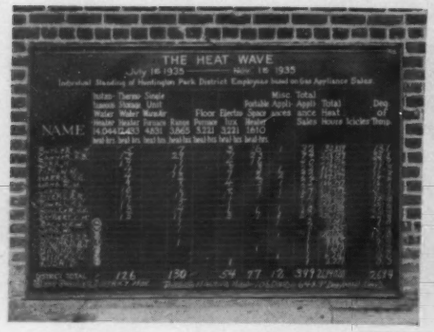


FIG. 1.

FIG. 2.

FIG. 3.

"THE HEAT WAVE"

A Load-Building Project Conducted by L. A. G. and E. Corp.'s Customer Service Men

By R. C. TERRADELL
Engineer, Gas Distribution Department
Los Angeles Gas and Electric Corporation

WESTERN GAS for August, 1935, published a preliminary announcement of a load-building activity carried on by the Gas Distribution Department of the Los Angeles Gas and Electric Corp. during the summer and fall of 1935. At the editors' request the writer has prepared this summary which outlines the campaign plan as well as results achieved.

R. C. TERRADELL

The load-building contest for employees of our Gas Distribution Department was conducted from July 1 to November 1, 1935, during which period our men "sales-slanted" their service calls to the tune of 2,205 appliance sales.

In setting up the contest it was decided to award employee credit for prospects who were sold appliances, on the basis of annual average consumption of each appliance placed, this consumption being broken down into units known as "heat hours" (3412 B.t.u.). Each 10,000 heat hours of load was set up to equal a one-degree rise in temperature, to tabulate results, and the contest was appropriately named "The Heat Wave."

Seven Gas Distribution Department districts totalling 275 customer service men competed against each other on the basis of gas load secured per man day worked during the contest. To keep everyone informed on contest progress a facsimile of a thermometer was placed in a conspicuous location in the headquarters office of each district with the question over the top, "How hot is it in your District?" For every 10,000 heat hours of load sold by the members of the district, the thermometer rose one degree. In addition, the seven offices kept individual accumulative daily records of all employees on blackboards similar to the one shown in Fig. 1.

TABLE NO. 1. SCHEDULE OF APPLIANCE SALES CREDIT POINTS.

Appliance	Annual Average Gas Load (Cu. Ft.)	Heat Hours	Degrees
Instantaneous water heater	43,600	14,044	1.40
Thermo-storage water heater	38,600	12,433	1.24
Single unit warm air furnace	15,000	4,831	.48
Range	12,000	3,865	.39
Floor furnace	10,000	3,221	.32
Electrolux	10,000	3,221	.32
Portable space heater	5,000	1,610	.16

TABLE NO. 2. RESULTS OF "THE HEAT WAVE" CAMPAIGN.

Appliance	Total Unit Sales	Heat Hours	Annual Consumption (Cu. Ft.)
Instantaneous water heaters	21	294,924	914,264
Thermo-storage water heaters	600	7,410,068	22,971,211
Single unit warm air furnace	29	130,099	403,307
Ranges	726	2,802,125	8,686,588
Floor furnaces	46	148,166	459,315
Electrolux refrigerators	262	843,902	2,616,096
Portable space heaters	455	732,550	2,270,905
Miscellaneous appliances	67	2,471,784	7,662,530
Totals	2,205	14,887,315	45,984,216

Credit was based on annual average M c.f. rather than on merchandise value sold because (1) it served as an undisputed scoring basis, (2) it encouraged the sale of greatest gas consuming appliances, (3) it stressed load building rather than merchandising, (4) it gave employees a more definite realization of what it means in terms of load to lose an appliance sale to competitive fuels, and (5) it gave employees a more definite realization of what it means in terms of load to replace a competitive fuel-consuming appliance.

General conduct of the campaign was in the hands of a "Central Weather Bureau," consisting of a committee of four. Also, each district foreman acted as "Weather Man" for his district, his duties consisting of advising and otherwise aiding his district contestants and of maintaining contact with the sales department. The chairman of the Central Weather Bureau calculated the current and accumulated results of the contest by districts.

In setting up the campaign the Central Weather Bureau first determined

(Continued on Page 62)

TAXING CHAIN STORES

and how utility appliance merchandising is involved

By DOUGLAS G. Mc PHEE

THE AMERICAN gas industry is a party in interest in the national fight now being waged against the multiple-outlet system of merchandising.

That such a battle is in progress is demonstrated by the fact that 22 states now have special chain-store taxes on their statute books, requiring multiple-outlet stores to pay annual license fees graduated in proportion to the number of their stores and ranging from nominal sums up to $800 a year per store.

That gas and electric companies are vitally affected is demonstrated by the figures from the most recent census of distribution (1933), showing that only 33.2 per cent of the sales of all household appliances were those of "independent" stores; 36.8 per cent of the total represented sales of stores operated by the utilities; and 21.5 per cent represented sales of chain stores. While utility companies have made much progress in the encouragement of all dealer outlets since this 1933 survey, which has lowered the ratio of their own sales to the total appliance volume, they continue to be the most important single factor in the household appliance sales field.

In the nation-wide efforts to tax out of existence chain stores of all kinds the 21.5 per cent of appliance sales which are made by chain organizations is obviously the first target. But the 36.8 per cent that represents sales through utility-operated stores is no less directly concerned in the battle, for these, too, are sales by multiple-outlet organizations.

In Texas, where chain store tax legislation became effective on January 13 and is now under litigation for constitutionality,* the vicious effect upon utility sales operations is already to be seen. One gas utility operating in 250 towns has cut its appliance stores to 39, as well as cancelled many of its merchant dealer connections, and will still face a tax of more than $9,000 annually if the law is sustained in the courts. An electric utility has shut down 23 of its sales stores, leaving 35 still in business. The Texas tax begins at $1 a year for the first store and rises to $250 per store for 20 to 35 units, with a $750 tax per store for 50 or more units. Action of the Texas utilities thus far has been directed at restricting their operations to a point where they will come largely within

(Continued on Page 52)

*Details of the Texas situation will be found in the news pages of this issue.—*Editor.*

TABLE NO. 1. HOUSEHOLD APPLIANCE STORES IN THE UNITED STATES*

Number of Stores and Sales, by Type of Store—(All sales in thousands of dollars)

Division	All Stores		Independent			Utility-Operated			Chain Stores			Other Types
	Number	Net Sales	Number	Net Sales	% of Total Sales	Number	Net Sales	% of Total Sales	Number	Net Sales	% of Total Sales	% of Total Sales
United States	**9761**	**198,662**	**3926**	**65,880**	**33.2**	**3976**	**73,160**	**36.8**	**1355**	**42,669**	**21.5**	**8.5**
Pacific	**937**	**19,106**	**445**	**7,338**	**38.4**	**330**	**3,858**	**20.2**	**104**	**6,166**	**32.3**	**9.1**
California	625	15,773	345	6,221	39.4	161	2,574	16.3	75	5,500	34.9	9.4
Oregon	106	1,321	34	393	29.7	54	483	36.6	13	300	22.7	11.0
Washington	206	2,052	65	724	35.3	115	801	39.0	16	366	17.8	7.9
Mountain	**394**	**4,535**	**120**	**1,064**	**23.5**	**221**	**2,838**	**62.6**	**40**	**422**	**9.3**	**4.6**
Montana	84	915	21	134	14.6	54	705	77.1	9	76	14.6	....
Idaho	67	583	11	158	27.1	52	378	64.8	3	44	7.6	.5
Wyoming	38	338	5	23	6.8	29	290	85.8	....	....	....	7.4
Colorado	80	1,272	37	307	24.1	31	766	61.0	10	122	9.6	5.3
New Mexico	27	246	14	99	40.3	9	97	39.4	4	50	20.3	....
Arizona	33	277	7	58	20.9	18	106	38.3	5	55	19.9	20.9
Utah	54	747	14	128	17.1	28	496	66.4	9	75	10.1	6.4
Nevada	11	157	11	157	100.0	....	....	....	....	....	....	....
W. S. Central	**874**	**11,694**	**201**	**3,894**	**33.3**	**486**	**4,773**	**40.8**	**186**	**2,597**	**22.2**	**3.6**
Arkansas	129	739	14	164	22.2	105	383	51.8	8	172	23.3	2.7
Louisiana	72	1,323	20	169	12.7	35	791	59.8	13	312	23.6	3.9
Oklahoma	123	1,778	48	969	54.5	12	14	0.8	57	611	34.4	10.3
Texas	550	7,854	119	2,592	33.0	314	3,585	45.7	108	1,502	19.1	2.2
E. S. Central	**522**	**5,737**	**118**	**1,689**	**29.4**	**333**	**2,938**	**51.2**	**57**	**906**	**15.8**	**3.6**
Kentucky	180	1,760	64	892	50.7	94	582	33.1	14	173	9.8	6.4
Tennessee	118	1,902	28	388	20.4	70	1,201	63.1	15	237	12.5	4.0
Alabama	121	1,492	19	323	21.6	85	825	55.3	16	329	22.1	1.0
Mississippi	103	583	7	86	14.8	84	330	56.5	12	167	28.6	0.0
S. Atlantic	**920**	**17,210**	**334**	**5,842**	**33.9**	**426**	**8,418**	**46.2**	**122**	**2,047**	**11.9**	**8.0**
Delaware	20	300	11	218	72.7	6	40	13.3	....	....	....	14.0
Maryland	105	3,587	56	971	27.0	31	2,194	61.2	12	196	5.5	6.3
Dist. of Columbia	21	904	12	582	64.4	....	....	....	5	187	20.7	14.9
Virginia	163	2,823	66	1,612	57.1	71	827	29.3	18	227	8.0	5.6
West Virginia	106	1,425	37	573	40.2	49	608	42.7	16	198	13.9	3.2
North Carolina	138	2,748	35	458	16.7	82	1,834	66.7	18	397	14.5	2.1
South Carolina	63	1,056	19	208	19.7	35	677	64.1	9	171	16.2	0.0
Georgia	147	2,274	25	385	16.9	88	1,399	61.5	31	438	19.3	2.3
Florida	157	2,093	73	835	39.9	64	839	40.1	13	233	11.1	8.9
W. N. Central	**1275**	**17,169**	**420**	**5,303**	**30.9**	**650**	**7,157**	**41.7**	**135**	**2,285**	**13.3**	**14.1**
Minnesota	174	2,511	61	695	27.7	80	922	36.7	18	394	15.7	19.9
Iowa	304	2,658	83	640	24.0	190	1,618	60.9	24	141	5.3	9.8
Missouri	318	7,803	132	2,747	35.2	115	2,427	31.1	36	1,180	15.1	18.6
North Dakota	55	415	10	108	26.0	41	241	58.1	4	66	15.9	....
South Dakota	72	634	23	164	25.9	39	401	63.1	9	67	10.6	0.3
Nebraska	231	1,975	57	407	20.6	150	1,239	62.7	16	156	7.9	8.8
Kansas	121	1,173	54	542	46.2	35	309	26.3	28	281	24.0	3.5
E. N. Central	**2111**	**39,310**	**1205**	**13,755**	**35.0**	**745**	**15,138**	**38.5**	**254**	**7,549**	**19.2**	**7.3**
Ohio	587	12,042	307	6,755	54.3	180	2,674	22.2	60	2,064	17.2	6.3
Indiana	367	2,818	105	1,144	40.6	114	916	32.5	37	615	21.8	5.1
Illinois	541	13,718	209	2,211	16.1	203	6,771	49.4	94	3,580	36.1	8.4
Michigan	336	6,093	150	2,501	41.0	125	2,179	35.8	43	836	13.8	9.4
Wisconsin	280	4,639	127	1,358	29.3	123	2,598	56.0	20	454	9.8	4.9
Mid. Atlantic	**2093**	**64,588**	**1072**	**19,966**	**30.9**	**535**	**20,321**	**31.5**	**356**	**17,861**	**27.7**	**9.9**
New York	928	34,097	485	10,584	31.0	203	9,220	27.0	184	10,832	31.8	10.2
New Jersey	327	10,394	187	3,391	32.6	73	4,177	40.2	32	1,308	12.6	14.6
Pennsylvania	838	20,097	400	5,991	29.8	259	6,924	34.4	140	5,721	28.5	7.3
New England	**735**	**19,273**	**321**	**7,033**	**36.5**	**269**	**7,708**	**40.0**	**96**	**2,787**	**14.5**	**9.0**
Maine	104	1,924	33	560	29.1	48	1,022	53.1	8	127	6.6	11.2
New Hampshire	53	796	22	230	28.9	24	388	48.7	6	76	9.6	12.8
Vermont	45	1,051	22	419	39.9	17	486	46.2	5	91	8.7	5.2
Rhode Island	44	1,500	32	723	48.2	3	362	24.1	5	107	7.1	20.6
Massachusetts	341	9,663	139	3,275	33.9	129	4,277	44.3	47	1,282	13.2	8.6
Connecticut	148	4,339	72	1,826	42.1	38	1,173	27.0	35	1,104	25.5	5.4

* From Census of American Business, 1933.

RESULTS IN PLUMBER COOPERATION

By C. H. LIGHT

The Peoples Gas Light and Coke Company
Chicago, Illinois

OVER 200 plumbing contractors cooperated in the water heater sales program of The Peoples Gas Light and Coke Co. in 1935. Mr. Light, in a paper given before the 43rd convention of the Illinois Master Plumbers Association on January 16, has reviewed the development of this cooperative work.

After stressing the competitive nature of the water heater market, and the necessity from the utility's standpoint of selling only safe, attractive, efficient water heaters, properly installed and of adequate capacity, Mr. Light dealt with the gas company's essential right to control sale of equipment as a guarantee of proper customer service. This phase of his address, together with the outline of his company's special water heater activity with dealers, appears below.—EDITOR.

ONE of the fundamental principles of utility operation is that a gas company, in addition to its primary business of manufacturing, distributing, and selling gas for any and all purposes, must have the inherent right to control the sale of equipment in order that its customers may satisfactorily use the product of the company.

In the early development or extension of a new market it may be necessary for the utility actually to manufacture the equipment required for the use of its product. It may be necessary for the utility to give away equipment or at least to sell it to the customer at a price below its cost of production. Any and all of these methods may be necessary and are fully justified in the early promotion of a new market.

There can be no serious argument against such procedure if we consider this matter from the standpoint of the merchant or dealer. The manufacturer, the jobber, or the dealer have no interest in an article or an appliance until the general public begins to purchase it in considerable volume. For instance, when gas was first used as a fuel for cooking, there was no general distribution of gas ranges by dealers. In fact, for a long time the gas utilities were the sole agency through which a gas range could be purchased by a prospective consumer, and the whole burden of promotion and selling had to be carried on by the gas company.

Eventually, as gas for cooking became more and more popular, department stores and other retail merchants and dealers came into the field, and very soon took over a major part of the business to the extent that today gas company distribution of ranges represents only a very small per cent of total range sales. In this market the utility is now primarily concerned in seeing to it that adequate standards of construction, beauty, and economy are at all times maintained.

It is now generally recognized that as present markets are extended and new markets for utility service are developed, cooperation between the utility, the manufacturer, and the dealer, is sound general policy and that every encouragement should be given to these other agencies to come into the market so that the utility can take advantage of the enterprise and energy of their merchandising efforts.

The Peoples Gas Light and Coke Co., we believe, has developed the most cordial relations with manufacturers, dealers, and contractors, and all other agencies having anything to do with the merchandising or installation of domestic gas equipment. Some form of cooperative sales plan has been adopted in each of the fields of cooking, refrigeration, water heating, and house heating. These plans, we believe not only have eliminated any antagonism that may have formerly existed, but also have been largely instrumental in greatly increasing sales.

The history and development of the cooperative sales plans of The Peoples Gas Light and Coke Co. can be set forth most clearly by a brief review of our policies in connection with the promotion of automatic water heating, both prior to and during the year 1935.

Ever since the company has been in the business of promoting the use of gas for automatic water heating, it has consistently turned over the installation of the equipment to licensed plumbing contractors, and in addition to this, prior to 1933, it was the practice to pay the plumbing contractor a commission for prospects furnished by him which resulted in a sale.

Of course, it is practically impossible for the gas company to include in its merchandising activity all makes of automatic water heaters, and it has been our practice, therefore, to confine our sales activity to two or three representative makes. This restriction, however, not only failed to effectively utilize the energy and effort of the manufacturers and dealers of other automatic water heaters not sold by us, but placed us in the position many times of actually competing with them because they were unable to meet our prices, terms, or methods of billing.

WE realized that in order to capitalize to the fullest possible extent on all agencies interested in the market, it was obvious that our sales methods, terms, etc., must be such that all of these agencies be permitted to do business on the same basis.

During the latter part of 1933, therefore, we entered into cooperative agreements with all of the major water heater manufacturers and their authorized plumber dealers, under which we agreed to finance time payment accounts taken by them and to bill the customer just as though the sale actually had been made by ourselves.

This plan was almost immediately productive of a considerable increase in promotional activity on the part of the manufacturers, and a corresponding increase in sales activity by their plumber dealers. During 1934 there was a marked increase in dealer sales. The full effect of this cooperative relationship was not fully realized, however, until 1935, when we put into effect two other important changes in poplicy.

Prior to 1935 time payment accounts were limited to 36 months, and although we found that we had very little difficulty in convincing prospective customers of the desirability and need for automatic hot water service, it was apparent that price and terms were in many cases a serious obstacle to completing the sale.

Obviously, the establishment of price reductions or longer terms by the gas company was impossible without disrupting dealer relations. The gas company early in 1935 entered into further agreement with manufacturers, under which prices of automatic wa-

(Continued on Page 54)

THE HEATING SYSTEM

By B. A. JOHNSON

Staff Engineer, Space Heating Division,
The Peoples Gas Light and Coke Company

THE heating system is a generalization applied to many things which have to do with heating in buildings. However, insofar as this discussion of the heating system is concerned, it is limited to the phase of heating in the home that begins at the point where the heat is already manufactured and in a "packing case," so to speak, ready to be sent on its way to the place where utilized.

B. A. JOHNSON

In the language of the engineer, the heating system means pipes, radiators, registers, vents, etc. In the manufacturer's language, it is the manufactured product in the hands of the distributor or retailer ready to be delivered and consumed by the customer. In the customer's language, it is the means by which results of the use of a fuel are measured insofar as his comfort is concerned.

Heating by means of warm air dates back to the Year of One, when a circular furnace was used giving out streams of hot air into a hypocaust or chamber under the ground floor of the house, containing arrangements of hollow tile pillars which conducted the hot air to a series of wall and floor flues provided to carry it throughout the building.

However, this early heating method evidently was lost sight of during the centuries following. Records in more modern times indicate that quite a little progress was made when greenhouses were successfully heated by means of hot water early in the 18th century. There seems to be no question but what the use of hot water for heating purposes antedates the use of steam, the latter having been made use of first early in the 19th century.

To write an article on heating systems covering such details as design, principles and construction features would in itself entail several comprehensive books. Therefore, in this particular article, I am confining myself to two general headings: A. A general outline and classification of heating systems covering briefly identifying features, advantages, disadvantages, and the problems encountered in each; B. Brief principles of calculations.

The first heading is covered in table form with illustrations for each type of system classified (see following two pages), while the second heading is covered below.

BRIEF PRINCIPLES OF HEATING SYSTEM CALCULATIONS

Radiation, Leader Areas and Duct Sizes:

The B.t.u. loss figures for one room or an entire building are the basis for determining the amount of radiation, duct areas, heating plant capacity to properly heat the building and the amount of fuel that should normally be required to supply enough heat for a normal heating season.

Hot Water Heat: The radiation required is figured on the basis of 1 sq. ft. for each 150 B.t.u. loss.

Steam Heat: The radiation required is figured on the basis of 1 sq. ft. for each 240 B.t.u. loss.

Note: The above conversion factors are for equivalent direct radiation (cast iron column radiation in still air). Other types of radiation should be figured on the basis of their heating capacity per sq. ft. under normal conditions.

Warm Air Gravity Systems: The leader pipe sizes for the first, second and third floors are figured on the basis of one sq. in. for each 111, 167 and 200 B.t.u. loss respectively.

Warm Air Blower Type Systems: The duct sizes required to deliver the proper amount of heat are determined by:

1. The quantity of air to be delivered, which is a function of the temperature of the air delivered at a register, which in turn is controlled by the furnace design (output rating and blower capacity).

2. Velocity of air in duct systems.

If the air delivery temperature is known, it is an easy matter to determine the quantity required to supply a certain part of a building. Air delivery required is usually expressed in cu. ft. per minute (CFM).

Heat available from air per hour = CFM × 60 × Specific Heat* × Temperature Difference: (cold air and warm air register).

Then,

$$CFM = \frac{\text{Heat Loss per hour in B.t.u.}}{60 \times \text{Sp. Ht.} \times \text{Temp. Diff.}}$$

For a given set of conditions, say specific heat of air to be .018, and the temperature difference 70° F., this formula is simplified and can be expressed in any of the following ways:

1. $CFM = \frac{\text{B.t.u. Loss}}{60 \times .018 \times 70}$

2. $CFM = \frac{\text{B.t.u. Loss}}{1.08 \times 70}$

3. $CFM = \frac{\text{B.t.u. Loss} \times 55}{60 \times 70}$

4. $CFM = \frac{\text{B.t.u. Loss}}{75.6}$

5. CFM = B.t.u. Loss × .0132

The specific heat of .018 is for air at 70° F., which is properly applied when considering the cold air side of the system, or blower requirements when it is located on the cold air side. For the warm air in the ducts, the specific heat used should be an average of the specific heats at the cold air and warm air temperatures.

For warm air delivered at 150° F., numbers 4 and 5 of the formulae would be expressed as follows:

4. $CFM = \frac{\text{B.t.u. Loss}}{84.3}$

5. CFM = B.t.u. Loss × .0118

After the CFM has been determined, it is then necessary to calculate the size of duct needed for this amount of air. Two general methods are used:

Velocity Method: Arbitrarily fix the velocity in the various sections of the duct work, reducing this velocity from the point of leaving the blower to the register. Accepted practice should be referred to before using this method.

Friction Method: Proportion the duct work for equal friction pressure loss.

In either case, the size of the duct is a function of the velocity.

$$CFM = \frac{\text{Area of Duct in Sq. In.} \times \text{Velocity in Ft. per Min.}}{144}$$

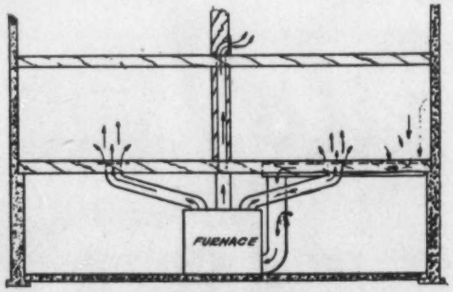
$$CFM = \frac{\left[\begin{array}{c}\text{Area of Duct in Sq. In.} \\ \times \text{ Velocity in Ft. per Min.}\end{array}\right]}{144}$$

$$\text{Duct Area} = \frac{CFM \times 144}{\text{Velocity Ft. per Min.}}$$

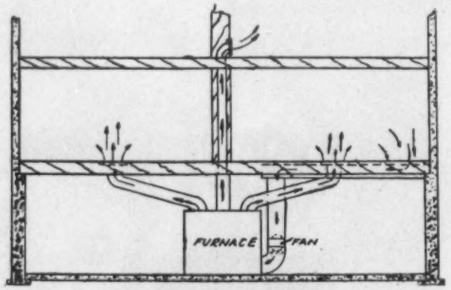
The velocity is either arbitrarily selected or determined from the friction loss desired.

(Turn to Page 14)

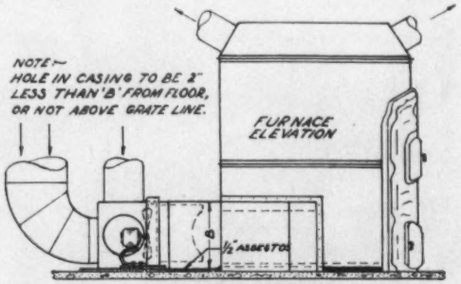
*Specific Heat is taken as the mean specific heat of air between the high and low temperature.



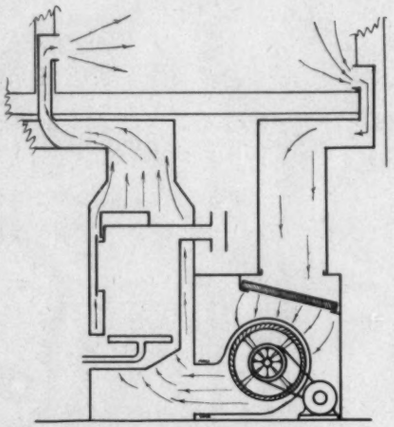
WARM AIR FURNACE
(GRAVITY)



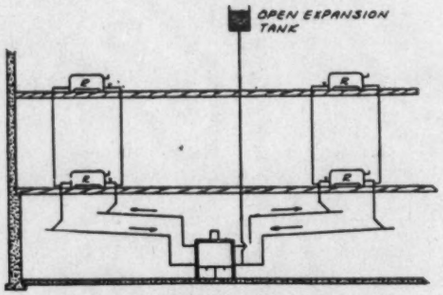
WARM AIR FURNACE
(FORCE FEED)



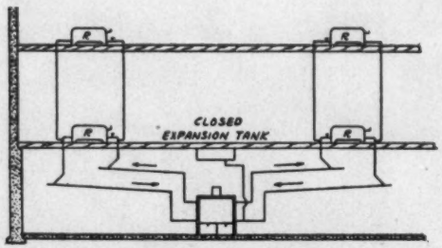
WARM AIR GRAVITY
(WITH FAN)



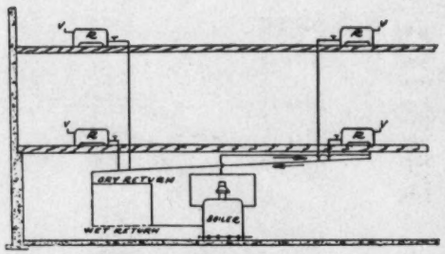
WARM AIR BLOWER SYSTEM



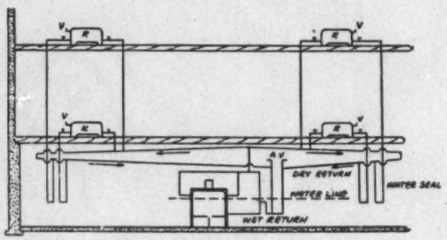
TWO PIPE HOT WATER HEATING
(OPEN TYPE)



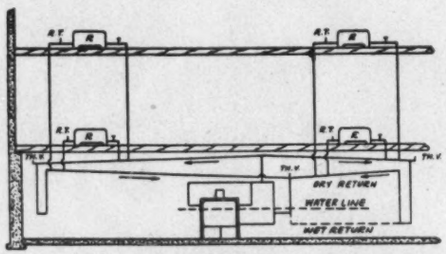
TWO PIPE HOT WATER HEATING
(CLOSED TYPE)



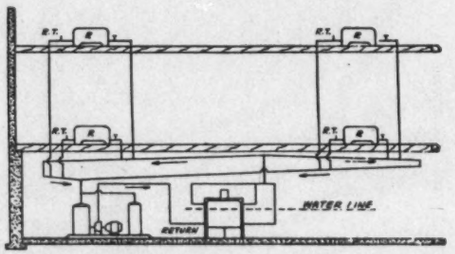
STEAM HEATING SYSTEM
(ONE PIPE)



STEAM HEATING SYSTEM
(TWO PIPE)



STEAM HEATING SYSTEM
(VAPOR TYPE)



STEAM HEATING SYSTEM
(VACUUM TYPE)

CLASSIFICATION OF HEATING SYSTEMS

TYPE SYSTEM	IDENTIFYING FEATURES	ADVANTAGES	DISADVANTAGES	PROBLEM	REMARKS
WARM AIR (Gravity)	Large pipes, sheet metal housing grilles and registers.	Low installation cost. Heating combined with ventilation. Possible control of humidity. Quick response. Lends to air conditioning. No space occupied in heated area.	Difficult to locate pipes for best results. Possible contamination of air. Large space required for furnace and piping.	Difficult to get uniform heat on windy days. Intermittent firing causes "cold 70". To get high efficiency with gas firing.	Should be tested for leaks before installing gas. Room temperature control on automatic jobs should give frequent operations. Cold air area should be equal to or greater than the combined warm air areas. Elaborate piping layouts usually cause difficulty. Cold air register should be located at outside wall.
WARM AIR GRAVITY (With Fan)	Same as gravity except fan in "bonnet" or cold air return.	Increases efficiency of system. Increases capacity of system. Lower air temperature. Air circulation in summer. More uniform temperature.	May be noisy. Possibility of drafts if fan not properly controlled.	Drafts if cold air returns are not near outside walls. To balance heat distribution.	Free area passages at furnace should be baffled to get even air distribution over heating surfaces. Fan should be automatically controlled.
WARM AIR (Blower)	Same as gravity except smaller housing and ducts. Blower usually in cold air return.	No limitations on location of registers or furnace. Lower air temperature. Smaller pipes can be used. Air can be filtered and washed. Remote rooms heated better. More economical than most gravity systems. Assured air delivery.	Higher first cost. Sometimes noisy. Electrical and mechanical devices require service. Power cost.	To synchronize room temperature control, blower operation, and heat input.	Free area passages should be baffled if blower is installed on warm air gravity system. Ducts should be designed to give equal function to insure balanced air distribution. Heat input and air delivery should be balanced to give 130-150° air at register. Blower capacity should give at least four air changes per hour. Air temperature limit control essential for safe operation.
HOT WATER (Open)	Altitude gauge and thermometer. Expansion tank at highest point. Large piping and radiators.	Free from mechanical devices heating at low temperatures. More continuous heating.	Liability of poor circulation. Large radiators in heated area. Slow response. Coasting effect. Venting not automatic. Limited to smaller buildings unless forced circulation.	High water temperature required to heat properly.	Forced circulation by means of pump will correct "sick" systems and give more efficient operation. Down feed systems are used when heating plant on same level as radiators. Radiator sizes are figured on basis of 1 sq. ft. of radiator per 150 B.t.u. loss.
HOT WATER (Closed)	Pressure regulator and relief valve in water supply line. Pressure gauge. Sometimes expansion tank in basement ceiling.	Better circulation at higher pressures. Automatically kept full of water. Can get higher temperature than 212° if necessary.	Pressure relief sometimes lets water out on intermittent operation. Danger of excessive pressures if no expansion tank is used.	Sediment from water causing relief valve or pressure regulator not to function properly.	Radiators are sized on the basis of one square foot of heating surface to take care of 150 B.t.u. loss. Too long off periods on automatic operation causes cold 70°.
STEAM- (One-Pipe)	1 Main. 1 Connection at each radiator. Air vent on radiators.	Low installation cost. Simple construction.	Limited to small systems. Slow response at radiators farthest from boiler. Liability of noise.	Venting. Even steam distribution. Radiators might become trapped by sagging.	Pipe pitch important. Vacuum vents installed and general tightening of system will improve operation when gas is used. Distribution mains should be insulated. When gas is used, should have low water cut off and pressure limit control.
STEAM- (Two-Pipe)	Two connections on each radiator. Air vent on radiator.	Less noise than one pipe. Better return of condensate.	Same as in one pipe except better return of condensate. More piping required.	To give balance in steam distribution.	When gas is used should have low water cut off and pressure limit control. Rapid venting essential. Distribution mains should be insulated.
STEAM- (Vapor)	Two connections on each radiator, traps for relieving air and water from radiator. Inlet at top and outlet at bottom of radiators.	Rapid venting. Free circulation. No noise. Steam circulation control continues after pressure goes down. Heating with steam at lower temperatures.	Higher installation cost. More mechanical equipment.	To give good distribution at reduced load.	Graduated valves on radiators give better heat control and lend to individual room control. When gas is used should have low water cut off and pressure limit control.
STEAM- (Vacuum)	Pump in basement in addition to devices on vapor systems.	Ability to handle large systems with positive return of condensate. Rapid venting. Free circulation. Heating with steam at lower temperatures.	Higher installation cost. More mechanical equipment.	To maintain vacuum.	Pump handles condensate and removes air. Radiators can be installed below water line. Header design important if steady water line is to be maintained. When gas is used, should have low water cut off and pressure limit control.

P. C. G. A. SPRING CONFERENCES

Accounting, Sales, Advertising and Technical Topics Get Attention at Los Angeles Sessions

COMBINING forces in a joint Spring Conference, the Accounting Section and the Sales and Advertising Section of the Pacific Coast Gas Association conducted a two-day program for their members in Los Angeles, March 19-20. Meetings were at the Los Angeles Gas and Electric Corp. headquarters. Such subjects as that of long term financing made a common ground of interest for the two sections. Informal discussion of program topics, organized under well qualified discussion leaders, was the order of the day.

Two joint luncheons were held, which filled the L. A. G. and E. cafeteria to capacity, with attendance running to two hundred or more each day.

President H. M. Crawford was on hand to open the conference, and took an active part in its proceedings. In his opening remarks, he called attention to the conditions which now favor more successful selling and stressed the industry's need for using every proven weapon for load-building against intensified competition. Pointing out that the Spring Conference program gave a large place to women in the industry, Mr. Crawford took occasion to point out that the gas industry's sales efforts are ultimately directed at women. Women in America, he stated, own 41 per cent of the wealth, and are beneficiaries of almost all insurance. They exercise control over a high proportion of purchases for the home.

As chairman of the Sales and Advertising Section, W. M. Jacobs took charge of the first session. He gave attention to the American Gas Association's Refrigeration Contest, reading portions of a report by B. H. Gardner, chairman of the A. G. A. refrigeration committee, and indicating the large increases in refrigerator sales which have resulted from the two previous national contests. One of the coveted "Swords of Merit"—top prize in each division of the 1936 contest—was exhibited by Mr. Jacobs.

Thought is being given by the Sales and Advertising Section, said Mr. Jacobs, to sponsoring a coast-wide heating campaign. While this activity is not definitely planned at this time, it is being considered as a possibility, inasmuch as the heating load has not been covered by other national or regional campaigns to date.

Long Term Selling

"Sales and Accounting Aspects of Long Term Financing"—a discussion directed by E. J. Strickland, chairman of the Domestic Sales Committee, and C. T. Burns, chairman of the Accounting Section Committee on Credit Problems—occupied most of the first morning session. A general endorsement of long term selling was apparent throughout the discussion, with a few qualifications on the need for careful handling of credit and collection matters involved. Mr. Strickland pointed out that the final criterion is the effect upon the customer; since volume sales resulting from long term procedure enable the manufacturer to offer a better appliance for the same money, the customer benefits, and the company benefits through a large increase in the acceptance of its services.

A word of caution was thrown in that sales personnel should not be allowed to coast along on the momentum of a long term offer. They should do a sales job, creating desire in selling the conveniences of new appliances rather than selling terms primarily.

Opinion was expressed that appliance sales volumes will continue to mount through the long term procedure. Great as have been recent accomplishments, they are still not exceeding normal replacement business. The Better Housing Program has centered attention of financing agencies upon the possibilities which lie in appliance sales contracts, and these new agencies will undoubtedly lend increasing aid to appliance merchandisers, stimulating both dealer and utility sales activities.

Some concern was expressed over whether terms would lengthen beyond the present 3-to-5-year practice. It was felt that better business conditions should be taken advantage of to sell shorter terms whenever possible. Advantages urged for long term selling included their influence in helping utilities to control appliance sales trends, increasing unit prices for dealers, improving dealer sales methods, and benefiting the company-dealer relationship in many ways.

On the subject of length of terms, Mr. Crawford saw little chance that the trend to long terms can be reversed, desirable as that might be. The industry must reach low income brackets, which are always present no matter what the condition of general business, and which can only be reached through long terms. Pacific Gas and Electric Co.'s experience with co-operation from banks on F. H. A. terms indicates that the banks are voluntarily taking on more and more finance load and risk in the appliance field. Credit loss is proving negligible. In February two banking institutions in Northern California alone put more than a million dollars on their books in household appliance sales contracts. In March the total was expected to exceed 1¼ million dollars, for these two banks.

Aids extended to dealers as a part of long term sales plans have demonstrated that the small dealer can do effective selling when credit stringency is removed. One problem introduced by long term plans is the introduction of new dealers into the field, with possible injurious effect to established dealers who have large investments at stake.

Some concern was expressed regarding credit losses which might be expected due to obsolescence of appliances in the latter years of term contracts, with the conclusion that proper credit procedure should be observed to maintain increasing purchaser equities in all long term contracts.

A. E. Higgins, secretary of the A. G. A. Natural Gas Department, contributed long term experience of utilities at other points in the country, and urged that care be taken in all long term plans to extend their full benefits to dealers.

Contributing to the discussion of long term use, Mr. Burns, from the accounting viewpoint, pointed out that the essential principles behind the use of credit are in no wise changed by long term selling. Character, capacity, and capital are still fundamental in the credit structure. However, the new long term plans are shifting the emphasis from capital, to character and capacity.

Mr. Wood of L. A. G. and E. Corp. told in some detail of his company's field credit investigation force, and the plan under which they operate in connection with long term appliance contracts.

Discussion of long term selling from the angle of financing and accounting methods involved developed the thought that utilities, if they are to proceed successfully in this field, should take a leaf from the book of finance company experience. Their methods must approach those of established financing agencies, and in many instances it will be found desirable to employ the financing services of existing agencies.

Home Service

The Association's Home Service Committee made a much enjoyed contribution to the conference in Miss Victoria Warner's review

P.C.G.A. President H. M. Crawford inspects "Sword of Merit", held by Servel, Inc Vice-President H. A. Strong, during Sales and Advertising Section meetings at Los Angeles.

of home service activities on the Pacific Coast, and in a skit sponsored by the committee. Miss Warner's talk dealt with typical home calls made by home service workers, as well as organized club contacts and recipe services. "All In a Day" was the caption of the home service skit, which was staged by the dramatic group of L. A. G. and E.'s employee association educational committee. The skit presented was the one awarded first prize in the A. G. A. home service committee contest last year. Action centered around a home service director's office, and portrayed the many-sided program which makes up the home service department routine.

Advertising Committee Topics

Under the energetic direction of F. M. Raymond, chairman of the Advertising Committee, several features on the program gave attention to advertising activities. J. S. Spaulding of the L. A. G. and E. Corp. dealt with cooking schools as a promotional medium, drawing from his own company's highly successful experience. Of particular interest was his company's use of cooking school booklets to sell the idea of the complete gas kitchen. Mr. Spauling exhibited several effective kitchen plans in full color, which are being used prominently in recipe booklets for cooking school distribution.

Gas exhibits at the San Diego Exposition were described by R. J. Phillips, San Diego Consolidated Gas and Electric Co., who has had active charge of laying out and staging the gas industry displays at the Exposition. These displays were described in last month's *Western Gas*.

Survey Data

F. W. Thompson, Los Angeles Gas and Electric Corp., gave an exceedingly interesting paper illustrated by a number of charts, on the subject of "Furnishing Survey Data to Dealers." Mr. Thompson spoke from the background of a significant survey which his company has conducted on its system and told of methods following in release of information to dealers and follow-up methods employed to check on dealer treatment of the leads, as well as sales resulting. Survey experiences of several other companies were brought out in the general discussion following this paper. Effective use of survey data by dealers involves an educational problem for the gas company, as it is essential that dealers realize survey leads constitute live prospects, and that such prospects are expensive to obtain.

A gas hair dryer campaign carried on in Southern California for the past several months was described by Max Scholter, special representative in charge of the activity. Mr. Scholter reported results of nearly 2,400 calls on the beauty shop trade which he has made in Southern California in the interest of gas-fired hair dryer sales, resulting in 394 sales of dryers, including 1,937 hoods, and 135 marcel stoves. New gas load accounted for by these sales totals something over 31 million cubic feet of 1,100 B.t.u. gas. The campaign has increased the hair dryer load in proportions ranging from 100 per cent on one company's system to 280 per cent on that of another utility. Indirect sales during the same period have brought 58 dryers onto the gas line, totaling another 4½ million cubic feet in the new gas load.

Speakers' table at March 19 luncheon, P. C. G. A. Conference

Industrial Sales

Industrial gas sales got the spotlight in the morning meeting of the second day, with E. M. DeRemer, Southern California Gas Co., presiding. R. L. Grutzmacher, chairman of the Industrial Sales Committee, was unable to be present. Mr. DeRemer first introduced Roy Hunt, fuel supervisor for the Atchison, Topeka & Santa Fe Railway, who brought the customer's viewpoint to the meeting in a very constructive way. Following a paper which dealt with application of gas to diverse operations by his company, ranging from locomotive firing to heavy heat treating operations, Mr. Hunt answered a number of frank questions as to gas company sales and service policies on industrial load. He made several suggestions of value, among them that responsibility for servicing be definitely fixed within each industrial department so that the customer may get results with a minimum of trouble; also that quarterly inspections be provided all industrial customers.

C. A. Blesch of Natural Gas Equipment, Inc., contributed a valuable paper on "New Applications of Gas Burner Equipment" discussing particularly the application of radiant tubes and diffusion combustion. Following this paper Mr. DeRemer led a discussion of market possibilities for industrial air conditioning.

A three-year dealer cooperative activity in San Diego was covered for the conference by J. Clark Chamberlain of the Gas Appliance Association of San Diego. Mr. Chamberlain described past campaigns in his area, including a current range drive which will culminate in a spectacular cake-baking contest at the San Diego Exposition.

Ethics in Advertising

A. C. Joy, advertising manager of the Pacific Gas and Electric Co., dealt with "Exaggerated and Unethical Advertising." Mr. Joy, representing a combination company, carried water on both shoulders quite successfully and convinced his hearers that a utility company—gas or electric—should use its advertising primarily to sell the merits of its own product, without making "invidious comparisons." He exhibited several advertisements illustrating how negative selling through advertising has invited reprisals from competing fuels. "Live and Let Live" is a policy that has its application in the utility field as well as others, said Mr. Joy. He also voiced the thought that the best reply to unethical advertising of competitors is no reply at all. A specific danger pointed out by Mr. Joy in advertising on fuel costs is that of using averages or minimum costs, which often opens the way to damaging competitive fuel price comparisons.

Around the subject of radiant heaters, Clyde H. Potter, commercial manager of Southern Counties Gas Co., built an interesting talk stressing the load-building and competitive value of this appliance, particularly in connection with its fireplace application. He reviewed the history of the radiant heater and the load which it has put on the gas line in the past, and suggested that this is no time to abandon a proven load-builder.

A thorough-going system in use by Los Angeles Gas and Electric Corp., for following new construction activities was described by Paul Kuntz, manager of electric sales for this company. Among the sources of information utilized daily are building permits; contacts with realtors, builders and contractors; employee leads; a scrutiny of newspapers and trade periodicals; leads from appliance display rooms; kitchen planning activity; home call services; architectural bureau contacts; services for the speculative builder and owner-builder. Use of general media such as advertising, cooking schools, etc., for building leads was discussed. Display homes and co-operative displays are also a valuable source for such leads.

Under the head of "Group Appliance Selling," J. E. Kern, Southern California Gas Co., related his company's experience in selling appliance combinations. Southern California Gas Co. finances gas refrigerators ordinarily over a 3-year period, but for some time has made available a combination plan under which a gas refrigerator, a range, and/or a water heater may be purchased under the same contract over 5 years. A spot analysis of the company's long term sales contracts reveals that 40 per cent of them were for combination purchases. Of such

combination purchases, 94 per cent combined the range with the refrigerator, and 6 per cent were for a refrigerator and a water heater. Repossession experience was equally good on the combination deals, and Mr. Kern stated that this plan contributed to purchase of larger size refrigerators and a better grade of range.

Accounting Section Topics

Under the direction of Lester E. Green, general chairman, the Accounting Section contributed a diversified program to the two-day conference, its meetings being exceptionally well attended. In addition to the joint meeting with the Sales and Advertising Section on the subject of long term financing, the accounting men held three separate meetings for their own group, highlights from which are covered below.

O. L. Moore and Mr. Green, both of the Los Angeles Gas and Electric Corp., presided over two related discussion topics, "Customer Accounting as It Affects Public Relations," and "Customer Deposit Policies," respectively. M. W. Gibson of Seattle Gas Co. was unable to lead discussion on the latter topic and Mr. Green filled his place. Importance of developing credit lists was emphasized in both of these discussions, since all customers are not subject to the same credit treatment. A trend away from requiring customer deposits for new accounts was also noted, the feeling being that utilities must come to accept customers' accounts on the same basis as other merchants do.

J. M. Bourus of San Diego Consolidated Gas and Electric Co. described his company's bi-weekly payroll plan by which it is enabled to keep its compensation on an hourly rate basis and still let employees know in advance the exact amount of their checks. Various payroll plans were discussed following Mr. Bourus' presentation. Payroll procedure of member companies has changed radically since NRA regulation led to the 40-hour week and payment on the hourly rate basis.

A paper by Robert Frizell of Los Angeles Gas and Electric Corp. on the subject of "How Long Should We Keep Our Typewriters?" presented an able study which will be reported in a later issue. O. J. Kauffman of the same company offered a discussion on "Use of the Degree Day Method of Interpreting Customer's Bills" which also was of unusual interest and will be given attention in a later issue. A progress report on the subject of standardizing general service forms was submitted by M. A. Seeley, L. A. G. and E., this subject to be treated in a final report to the annual convention.

Mr. Frizell also brought to the program a description of his company's method of numbering and inventorying office equipment.

Luncheons

Each of the two luncheon programs played to a full house. Mr. Jacobs presided over the first luncheon, at which W. O. Harris, who heads the publicity department of the Federal Housing Administration, Southern California District, was guest speaker.

Picturing a new building boom in the immediate offing, of proportions which will lift all business to new volume records, Mr. Harris submitted some building figures of tremendous interest. He stated that the F.H.A. program has had behind it a volume of publicity comparable only to that expended on the Liberty Bond campaigns. Results have barely scratched the surface of building and modernization possibilities, and a continuation of Title I, which may confidently be expected, will capitalize upon the promotional work which has been done to date. Losses under Title I have been less than 1/5 of 1 per cent on insured loans. The last annual report for F.H.A. shows 22 million dollars weekly in loans under Title 1 for 16 consecutive months, 28 per cent of this volume going for household equipment and appliances.

Describing results to date as only a "cocktail before the banquet," Mr. Harris exhibited a chart of family dwelling construction, from 1921 projected through 1927. Taking 400,000 new homes as the normal annual demand, he stated that there is now a deficiency of 1½ million homes, accounted for by the depression period during which home foreclosures reached a level as high as one thousand a day. Home construction reached a low point of 23,000 for the whole country. A pick-up is now clearly evident. In 1935 90,000 homes were constructed. This year is expected to see the total reach 200,000, with 450,000 anticipated for 1937. Mr. Harris visualized a construction level of 750,000 dwellings annually from 1937 through 1945, constituting a sustained building "boom" of proportions never before attained.

Gas industry sales executives were urged to analyze these future possibilities broadly, and gear up their promotional activities with new construction and modernization.

National Advertising Assured

After opening the second luncheon program Friday noon, Mr. Jacobs called upon F. M. Raymond, chairman of the Advertising Committee, to conduct the proceedings. James F. Pollard was first called upon for comments on the national advertising program on which the gas industry is now definitely embarked. Mr. Pollard reviewed the development of this program from the inception of the idea at the P. C. G. A. 1935 convention down to date. As set up at the A. G. A. Convention in October and ratified by the A. G. A. directorate, the plan called for endorsement by companies representing at least 70 per cent of the industry's meters, before launching of advertising. This 70 per cent and slightly more has now been definitely signed, said Mr. Pollard, and the next step is selection of an advertising agency and development of detailed campaign procedure. On the 70 per cent basis the plan contemplated a 4-cent per meter participation by all companies, to produce a $500,000 fund annually, for three years. As additional companies come in to underwrite costs, the proportionate cost will drop below the 4-cent level. Mr. Pollard in his remarks referred to the exhibit at the A. G. A. Convention showing relative amounts of electric and gas advertising in national magazines. This exhibit of advertisements pasted on strips of wrapping paper, totalled 150 feet for electric as compared to 20 feet for gas advertising, clearly pointing the urgent need for more national publicity behind modern gas service.

Following Mr. Pollard's remarks, Mr. Raymond called upon Don Thomas, executive secretary for the All-Year Club of Southern California, who directed thought along another line of interest to advertising men. The depression has emphasized that all industry is intimately inter-related, he said. No utility or manufacturer can sustain its prosperity apart from general prosperity in its service area. Fundamental, too, is the fact that a community needs new income; it cannot live merely by trading dollars. On the above premises, Mr. Thomas went into an interesting description of the tourist market and its exploitation. While California pioneered in advertising for tourist patronage, nearly every major section of this country is now in active competition for the tourist dollar.

Mr. Thomas also pointed out the obvious fact that business comes from buying power, and that people make buying power. Industries the country over are 80 per cent home-grown, indicating plainly that industry follows rather than precedes population growth. Mr. Thomas made it plain on the basis of the facts revealed that utility managements have an active interest in encouraging a healthy upward movement of the population level in their area—a trend to which community advertising contributes effectively.

Technical Section Members Turn Out in Force for Diversified Program

MARCH 26-27 found P.C.G.A. technical men in session for the Spring Regional Conference of the Technical Section, also held in the auditorium of the Los Angeles Gas and Electric Corp.'s main office building. The Section's three main committees on Transmission, Distribution, and Utilization, packed into the two-day meeting papers and reports on a variety of subjects. Attendance exceeded 100 at all sessions.

P. E. Beckman, Pacific Gas and Electric Co., as general chairman of the Technical Section, opened the meeting by welcoming the delegates, and then called upon A. B. Allyne, Southern Counties Gas Co., to conduct the opening discussions as chairman of the Transmission Committee.

Natural Gas Calorimetry

Guy Corfield, Los Angeles Gas and Electric Corp., as chairman of the "Calorimetry" sub-committee, reported that the work of this sub-committee, a continuation of last year's activities, had been confined to development of a pre-humidifying device for combustion air entering a flow calorimeter. Such a device, if developed for practical usage, should eliminate the difficult humidity correction that is now necessary in heating value tests

on gas. Two designs of humidifiers that have been developed elsewhere, were described by means of slides. One of them, employing a basket of glass beads that fits into the bottom of the calorimeter and is wetted by the condensed water from combustion, has been tested by the committee and appears to offer too much resistance to flow of air and provide inadequate humidification when the air is comparatively dry, when natural gas is being tested. The last slide showed a preliminary sketch of a design the committee is now working on.

Pipe Protection

A brief progress report of the "Pipe Protection" sub-committee was given by C. P. de Jonge, chairman, who then introduced four committee members who presented papers. "Improvements in Electrical Pipe Protection," by W. R. Schneider, Pacific Gas and Electric Co., and "Cathodic Protection by the Southern Counties Gas Co.," by H. J. Keeling, will be covered in an early issue of Western Gas, while the paper on "Tests to Determine the Importance of Dissimilar Metals on Corrosion in a Distribution System," by F. A. Hough and A. B. Allyne, Southern Counties Gas Co., will appear in full next month. "The Use of Cellulose Materials for Pipe Protection," discussed by H. G. Laub of the Southern California Gas Co., gave interesting facts on the manner in which an asphaltic coating, with two internal layers of waterproof cellulose wrapping, is applied and used by his company, to give a pipe protection that has proved very satisfactory. (This method was described in detail by Lee Holtz, of the Southern California Gas Co., in the October 1935 issue of *Western Gas.*)

In the discussion that followed, Dr. Gordon Scott, pipe line technologist, Los Angeles, pointed out that in the evaluation of corrosivity of soils the chemical composition should not be overlooked entirely, because of a residual potential present in all soils when in contact with iron, tending to cause the iron to corrode; for neutral soils (pH equals 7) this potential is 0.168 volts; it increases in alkaline soils and decreases in acid soils. B. A. Williamson, Los Angeles Gas and Electric Corp., gave it as his opinion that copper services would not be desirable in a distribution system that might at some future date be subjected to cathodic protection. W. M. Henderson of the same corporation described corrosion recently disclosed in the immediate vicinity of a brass stop cock, and recommended that such brass fittings be protected similarly to the iron pipe.

The morning session was concluded with the showing of a colored motion picture film entitled "Corrosion Mitigation by Southern California Gas Company." This film was taken by Lee Holtz, and is to be exhibited at the American Gas Association Distribution Conference, Memphis, Tenn., April 6-7. So far as is known, this is the first colored motion picture that has ever been used with a technical paper on a gas subject, and the use of color made a very impressive presentation. Corroded pipe specimens were shown, followed by the cleaning, priming and wrapping of new pipe, using the double cellulose wrapper already discussed; the picture then showed the installation of this pipe in the trench, together with protection of the welded joints. This picture takes 20 minutes for presentation.

Compressor Plants and Pipelines

B. M. Laulhere, Southern California Gas Co., chairman of the "Compressor Plants and Pipelines" sub-committee, read a short progress report and then introduced three speakers from the Southern California Gas Co. "Piston Ring Temperatures" was the subject treated by W. K. Dodd; "An Instrument for Colorimetric Determination of Hydrogen Sulphide in Natural Gas," by M. T. Burton; and "Factors Affecting Flow in Gas Transmission Pipelines," by J. B. Reddick. (These three papers will be given detailed attention in an early issue). In the discussion of the latter paper it was brought out that while the Weymouth flow formula had given the industry the valuable Friction Factor, the formula itself was not necessarily basic, nor to be considered as a standard.

Orifice Meter Standards

As chairman of the "Orifice Meter Standards" sub-committee, E. H. Fisher, Coast Industrial Gas Co., rendered a progress report and then introduced B. G. Williams, Southern California Gas Co., who read a paper on the "Relation of Super-Expansibility to Specific Gravity of Hydrocarbon Gases." This paper described work done by the California Natural Gasoline Association and published in bulletin form, whereby a dependable and usable relation has been discovered and developed between the super-expansibility and specific gravity of hydrocarbon gases; also the slope of the temperature curve has been determined, so that the super-expansibility factor for any temperature can be obtained when it is given for one temperature. Both tables and equations have been prepared, and their usage will materially lessen the amount of work heretofore found necessary in applying super-expansibility.

Mr. Fisher next introduced G. B. Reece, Southern Counties Gas Co., who read a paper entitled "The Intermediate Pressure Device," published elsewhere in this issue.

The chair was then taken by Otto Goldkamp, San Diego Consolidated Gas and Electric Co., chairman of the Distribution Committee. This committee sponsored a number of papers and reports commented upon below.

Under the title of "Effect of Diversity on Gas Meter and Regulator Capacities," N. L. Hoff, Los Angeles Gas and Electric Corp., gave results of an investigation of apartment house gas demands, which will be covered in next month's issue.

Effects of Humidity of Gas

Discussing the "Effect of Humidity of Gas on Leakage Through Jute Caulked Pipe Joints," C. P. de Jonge, San Diego Consolidated Gas and Electric Co., outlined tests made on such joints in two blocks of pipe in San Diego, the results being that no difference in leakage was disclosed between wet and dry gas. D. H. Perkins, of the same company, in discussing these results, told of treatment of several 18-inch joints with diethylene glycol. No improvement in leakage was obtained, even when the liquid was introduced into the bell through drilled holes, but this was explained when it was discovered that the jute within the bells had disintegrated. Mr. de Jonge's discussion and also that on "The Effect of Humidity on Meter Proof," by C. W. Capwell of the San Diego company, will be covered in some detail in an early number of *Western Gas.*

Code for Pressure Piping

D. H. Perkins, of the San Diego company, told the audience of the American Standards Association Test Code for Pressure Piping, recently published by the American Society of Mechanical Engineers, 29 W. 39th Street, New York, N. Y., as Bulletin A.S.A.-B-31. 1. In the Gas and Air Piping sections there appeared to be a number of items at variance with present Pacific Coast practice. Comments on this Bulletin were solicited by the committee which had prepared it, and a motion was adopted, initiated by W. M. Henderson, that the Technical Section appoint a committee to examine the Bulletin from the standpoint of Pacific Coast operations. The meeting was then adjourned.

Continuing the Distribution Committee's reports in the Friday morning meeting, March 27, W. A. LaViolette of the Pacific Gas and Electric Co. delivered a paper describing the various principles and apparatus in use for the remote control and registration of pressure.

Distribution Sub-Committee

H. S. Harris, Los Angeles Gas and Electric Corp., chairman of the "Breaking in Gas Meters" sub-committee, stated that such a variety of opinions had been disclosed as to the necessary volume or speed for breaking in, probably influenced by the numerous conflicting factors involved, that no definite statement or conclusion could be made at the present time.

F. S. Honberger, Southern California Gas Co., chairman of the "Gas Meter Change Period" sub-committee, introduced the query as to whether meters should be changed on the basis of gas passed rather than age. It was brought out in discussion that speed was more important than large registration; that climatic and specific locations would have an influence; that economics should be considered and a balance made between increased cost of frequent changing vs. poor registration as a result of too long intervals; that the investigation should be commenced on large meters of the commercial and industrial group.

The reports on "Unaccounted-for Gas," by F. A. Hough, Southern Counties Gas Co., and "Pilot Lights," by C. Eldon White and C. W. Stewart, San Diego Consolidated Gas and Electric Co., will appear as digests in an early issue. This completed the Distribution Committee's portion of the program.

Luncheon Program

A well-attended luncheon gathering was held in the cafeteria adjacent to the auditorium, on Thursday. At the close of the meal P. E. Beckman called upon D. L. Scott, Los Angeles Gas and Electric Corp., who in turn introduced the guest speaker, Judge Roy Dawson of the Municipal Court of the City of Los Angeles. Judge Dawson, speaking

(Continued on Page 51)

Home of Dallas Gas Co., Host to Natural Gas Men in May.

ON TO DALLAS ... MAY 5-8

for Annual Natural Gas Meeting

DALLAS, Texas—thriving home of Lone Star Gas Co., and 100 per cent natural-gas-served from Dallas Gas Co. mains—has much more than the excellent convention program printed on this page to offer A. G. A. Natural Gas Department members who gather there next month for the Department's annual meeting. With all Texas about to celebrate its 100 years of history as a republic and a state, some 60-odd buildings are rising at the Centennial Exposition grounds in Dallas—among them the Hall of Religion which is the gift of the Lone Star Gas organization. This background, added to Dallas' many other attractions, makes the set-up one which should be irresistible for gas men around convention time.

Two hotel headquarters—the Baker and the Adolphus—have been designated for the May 5-8 meeting, and A. E. Higgins, Department secretary, advises that it is high time to make reservations. Following is the tentative program:

GENERAL SESSIONS

MAY 5—9:30 A.M.

Meeting of Main Technical and Research Committee and Sub-Committees.

MAY 5—2:00 P.M.

William Moeller, Jr., Chairman

Opening Remarks by the Chairman—William Moeller, Jr., Chairman, Natural Gas Department.

Invocation.

In Memoriam.

Introduction of the Mayor of Dallas—R. G. Soper, President Dallas Gas Co.

Address of Welcome—George Sargent, Mayor, Dallas, Texas.

Address of the Chairman—William Moeller, Jr., Southern California Gas Co., Los Angeles, California.

Address—L. B. Denning, President, American Gas Association, Dallas, Texas.

Address—Alexander Forward, Managing Director, American Gas Association.

Report of Program Committee—A. E. Higgins, Secretary, Natural Gas Department.

MAY 6—9:30 A.M.

Report of Main Technical and Research Committee—H. C. Cooper, Chairman, Hope Natural Gas Co., Pittsburgh, Pa.

Report of Gas Measurement Sub-Committee—Thomas R. Weymouth, Chairman, Columbia Gas and Electric Corp.

Report of Pipe Line Sub-Committee—H. D. Hancock, Chairman, Cities Service Co.

Report of Gas Well Deliveries Sub-Committee—N. C. McGowen, Chairman, United Gas Public Service Co., Shreveport, La.

Address—Dr. John W. Finch, Director of U. S. Bureau of Mines.

MAY 6—7 P.M.

The Cabaret Banquet and Dance will be held in the Baker Hotel.

MAY 7—9:30 A.M.

J. V. Strange, Chairman

Advertising Natural Gas Sales—Morris Jacobs, Bozell & Jacobs, Inc., Omaha, Neb.

The National Advertising Program—Herman Russell, President, Rochester Gas & Electric Corp., Rochester, N. Y.

Dealer Coordination—H. F. Smiddy, Ebasco Services, Inc., New York, N. Y.

Reforming Natural Gas for Producer Gas Equipment—George M. Parker, Industrial Fuel Engineer, Mississippi River Fuel Corp., St. Louis, Mo.

MAY 7—8:00 P.M.

A Natural Gas Motion Picture will be shown in the Palm Garden of the Adolphus Hotel.

MAY 8—9:30 A.M.

William Moeller, Jr., Chairman

Report of Supply Men's Fund Committee—George E. Welker, Chairman, United Natural Gas Co., Oil City, Pa.

Gas Dispatching and Operation of Transmission Pipe Line Systems—S. H. Chadwell, Columbus, Ohio.

Geophysics in Oklahoma—J. R. Hatfield, Indian Territory Illuminaitng Oil Co., Bartlesville, Okla.

Sales Possibilities in Air Conditioning—E. A. Jones, L. J. Mueller Furnace Co., Milwaukee, Wis.

Painting and Public Relations—G. T. Koch, Superintendent of Compressors, Ohio Fuel Gas Co., Columbus, Ohio.

PARALLEL SESSIONS

MAY 6—2:00 P.M.

NATURAL GAS UTILIZATION AND SALES PROMOTION

J. V. Strange, Chairman

Importance of Commercial Gas Sales to the Natural Gas Company—Speaker to be selected.

Selling Improved House Heating for Better Customer Satisfaction and Larger Company Revenue—C. K. Patton, New Business Manager, Dallas Gas Co., Dallas, Texas.

How Much Free Appliance Service Can Natural Gas Companies Afford to Give—H. W. Geyer, Southern Counties Gas Co., Los Angeles, Calif.

Reaching Non-Home Owner for Water Heating—F. M. Rosenkrans, New Business Manager, Gas Service Co.

MAY 6—2:00 P.M.

NATURAL GAS PRODUCTION

B. M. Nowery, Chairman

Drilling and Completing Gas Wells—J. H. Dunn, Production Engineer, Lone Star Gas Co., Dallas, Texas.

Methods of Drilling Wells in Under Pressure—R. W. Hendee, President, Oklahoma Natural Gas Co., Tulsa, Okla.

Operation and Maintenance of Gas Wells from the Viewpoint of Conservation—S. W. Meals, President, Carnegie Natural Gas Co.

Utilization of Natural Gas in Repressuring Operations—L. A. Farmer, General Superintendent of Distribution, Oklahoma Natural Gas Co., Tulsa, Okla.

MAY 7—2:00 P. M.

NATURAL GAS TRANSMISSION

C. H. M. Burnham, Chairman

Practical Means of Maintaining Transmission Pipeline Efficiencies—B. M. Laulhere, Engineering Supervisor, Southern California Gas Co., Los Angeles, Calif.

Dust Proofing Compressor Stations—L. W. Jackson, Texoma Natural Gas Co., Texas.

Natural Gas Hydrate Experience—E. G. Hamerschmidt, Texoma Natural Gas Co.

Brake Horse Power Analysis of Compressor Station Costs and Performance—D. R. Croft, Ohio Fuel Gas Co., Columbus, and J. W. Partridge, United Fuel Gas Co.

MAY 7—2:00 P.M.

INDUSTRIAL GAS CONFERENCE

C. H. Waring, Chairman

Industrial Rates—Speaker to be selected.

Selling Industrial Gas—Geo. Bowersox, Natural Gas Equipment, Inc.

Gas Engine Power for Cooling—L. W. Melcher, Waukesha Engine Co.

1935 Peoples Gas Earnings $1.52 Per Share

The Peoples Gas Light and Coke Co., Chicago, reports a net income for the year 1935 of $1,009,823 or $1.52 per share according to the annual report issued by Chairman George A. Ranney. Net earnings for 1934 were originally reported as $863,145 or $1.28 per share, but this figure has been adjusted to $1,953,365 or $2.89 per share as the result of excess accruals for taxes during the year.

Mr. Ranney pointed out that the revision of the contract with the Natural Gas Pipe Line Co. of America for the company's natural gas supply resulted in an annual decrease in gas purchase costs of $1,497,583. Gross earnings rose from $34,652,106 for 1934 (adjusted figure) to $36,993,231 for 1935, which includes gas sales revenue of $36,181,-118, an increase of 7.02 per cent over 1934. The volume of gas sold increased 22.3 per cent. Expenses and taxes increased from $28,896,168 to $32,134,765.

Natural Gas Engineering Course to be Offered at Texas College

A degree of Bachelor of Science in Natural Gas Engineering will be conferred upon completion of a course in natural gas engineering that is to begin with the 1936 fall semester at Texas College of Arts and Industries, Kingsville, Texas. The four-year course includes study of natural gas geology, production, measurement, transmission, distribution, and natural gas uses. Employment in the gas industry during summer vacations is required.

The college is constructing a natural gas laboratory building which will be completely equipped and ready for use for the fall semester. Total registration fee is $39 per semester.

Consumers Power Co. Has New Domestic Rate Schedule

Consumers Power Co. has entered into a voluntary rate reduction in Saginaw and Bay City, Mich., involving an estimated reduction of between $75,000 and $100,000 annually in gas bills.

The general domestic rate under the new schedule is a 75-cent minimum charge for the first 300 cu. ft. of gas; $1.25 per M c. f. for the next 1,700 cu. ft.; $1.00 per M c.f. for the next 3,000; 85 cents per M c. f. for all over 5,000. A flat rate of 50 cents per M c. f. will be charged for house heating.

Portland Prospect Drives Succeed

Portland (Ore.) Gas & Coke Co. employee prospect drives during 1935 netted 21,694 prospects that resulted in 5,161 appliance sales. Four "Big Game Hunts," as the company's prospect drives are known, were conducted during the year and achieved 300 per cent of quota. James N. Flood was "game warden" in charge.

Zinn and Jones Get Promotions

W. R. Zinn was recently appointed manager of the Seymour district of Community Natural Gas Co., and Raymond W. Jones was appointed sub-district manager at Hamlin. Mr. Zinn succeeds J. S. Bourn, who resigned, and Mr. Jones' new position was formerly held by Mr. Zinn.

AT RIGHT

View of a battery of the gas space heaters along a section of the Chicago exhibit hall.

Gas Heats Huge Exhibit Space on Chicago Navy Pier

WHAT is believed to be the largest unobstructed exhibit space in the world, a space 67 feet wide and 2,300 feet long on Chicago's Navy Pier, is now being heated by gas.

The pier, which extends a half mile into Lake Michigan at the foot of Grand Avenue, close to down-town offices and hotels, has long been recognized as one of the city's most attractive locations for conventions, expositions, and other shows. The difficulty of heating the pier, however, has until now prevented its use during the winter months, when most conventions are held.

The unusual shape of the Exposition Hall, especially its extreme length, made it almost impossible to consider heating it from any central heating plant. In addition, the exhibit space is exposed to the weather at top and bottom, as well as on all sides. Another difficulty was that the comparative narrowness of the hall made it undesirable to use any heating equipment which would encroach on the floor space.

All of these difficulties, however, have been overcome in the heating installation just completed by the Robert Gordon Co. of Chicago. The heating equipment consists of 60 twin unit heaters, especially designed and manufactured by the Surface Combustion Co. for this installation. These heaters are placed 40 feet apart along the south wall of the exhibit space. Each twin unit has a consumption rating of 400,000 B.t.u.'s per hour. Air is circulated by two squirrel cage rotary blowers mounted on a single shaft, and driven by a 1 h.p. motor at a speed of 600 r.p.m. Each twin unit will heat and circulate 5,800 cu. ft of air per minute.

The heaters are hung from roof members 10 feet above the floor. Each unit measures 4 feet in width, 3 feet in depth, and 3 feet in height. Air is supplied to the heaters by a cold air intake running from each heater to within 3 feet of the floor. Each intake is supplied with a manually controlled damper so that inside or outside air can be circulated. The intake has a cross sectional dimension of 4 feet by 1 foot. Except for unusually crowded conditions, it is expected that most of the air will be re-circulated from the inside.

The installation is calculated to maintain a temperature of 70 degrees within the exposition space, even with the outside temperature at 20 degrees below zero.

It is contemplated that the fans on the heaters will be used during the summer time for ventilating the exhibit hall. The capacity of the fans makes it possible to change the air completely every eight minutes.

For use in mild weather the controls on each heater make it possible to shut off one of the twin units, and thus heat only half of the air which is circulated through the unit. All controls were manufactured by the Minneapolis-Honeywell Regulator Co., and are installed on a panel below each heater.

In order to secure an adequate supply of gas for the installation the Peoples Gas Light and Coke Co. of Chicago laid 3,000 feet of 12-inch main and 4,000 feet of 6-inch. This main carries gas at pressures between 2½ and 6 pounds per sq. in. Pressure is lowered at three sub-headers, where Reynolds reducing valves lower the pressure to 6 inches. Each of the sub-headers supplies 20 of the heating units, and each heating unit has a Reynolds regulator which reduces the pressure at the burner from 6 inches to 3 inches.

Gas is metered through a Connorsville rotary orifice meter with a capacity of 35,000 cu. ft. per hour. This meter is housed and kept at a temperature of not less than 40 degrees by a 30-gallon automatic water heater with radiation connected and surrounding the meter.

This heating installation, one of the largest in the country, emphasizes the unique flexibility of gas. The installation was made at approximately half of the cost of a central heating plant, and the suspension of the heating units from the ceiling releases valuable floor space for exhibition purposes. Heating of this space has already insured a number of conventions which the city would otherwise have lost.

Medford, Ore., Adopts Ordinance Regulating Gas Business

The city of Medford, Ore., recently adopted an ordinance to regulate the sale, installation, maintenance and repair of gas appliances and to regulate installation, maintenance and repair of house piping. The ordinance provides also for the collection of fees and licensing of persons engaged in the gas business. Under the terms of the ordinance anyone engaged in installing or connecting appliances must obtain a certificate of competence from the city for which a charge of $25 per year is made.

"...and I thought Gas was *Old-*

TODAY, gas refrigeration is bringing a new conception of gas and gas service to those who may have come to think of other fuels as more up-to-date, because more recently popularized, than gas.

The gas refrigerator proves to these people that with gas they secure an appliance which not only offers the last word in modern beauty and convenience, but also provides important operating advantages no other type of refrigerator can match.

In thus establishing the modernity of gas, the gas refrigerator builds important good will for the individual company and for the entire gas industry. Yet this benefit is but one of many that result from aggressive refrigeration selling.

Every gas refrigerator installed increases a customer's requirements by approximately 1800 cu. ft. (mfd. gas) monthly . . . provides a worthwhile merchandising profit without requiring new plant outlay... creates interest in other gas-using appliances. And because it helps insure an all-gas kitchen, the gas refrigerator protects the $250 investment which every domestic meter represents.

You will want to make sure that *your* company is prepared and ready for the big refrigerator buying months ahead. The new 1936 Electrolux gives you a product that is even more sales-inviting than the one which won so many families to gas refrigeration last year. In addition, the greatest advertising campaign in gas refrigeration history is helping to steadily increase the acceptance of Electrolux in your community and throughout the country. Decide now . . . to *March to Leadership with Gas Refrigeration* during the coming year! Servel, Inc., Electrolux Refrigerator Sales Division, Evansville, Indiana.

New Air-Cooled **ELECTROLUX**
THE SERVEL *Gas Refrigerator*

"I never realized how modern GAS was until I got my gas refrigerator."
fashioned!"
"Our GAS refrigerator is the most beautiful thing you've ever seen."
"Our refrigerator runs on GAS for amazingly little . . . just a few pennies a day."
"We picked the GAS refrigerator because it's years ahead in worthwhile conveniences."

Rate Cut Follows Favorable P. G. and E. Decision

PRESIDENT James B. Black of the Pacific Gas and Electric Co. appeared before the California Railroad Commission on Monday, March 16, and advised that body that a reduction in natural gas rates amounting to approximately $2,500,000 a year and effective throughout the company's system, would become operative on May 1.

This announcement was made one week after a Federal Court decision in the company's favor on a long pending suit instituted by the Commission.

In 1933 the Railroad Commission ordered a reduction of $2,100,000 to be made by P. G. and E. in its natural gas rates. The company took the case into the courts on the ground that such a reduction was confiscatory. This, incidentally, is the only rate case taken to court by the company in the 24 years it has been under the jurisdiction of the California Railroad Commission.

A counter offer submitted the Commission by the company, to make a voluntary reduction of half the amount, provided the suit and rate reduction order were dismissed, was rejected. Suit was brought by the Commission to dismiss an injunction granted the P. G. and E. to prevent the enforcement of the rate reducing order. The injunction had been granted in the Federal Court on alleged violation of the company's constitutional rights.

A Special Master in Chancery was appointed to act as referee in a hearing, and eventually delivered to the court an opinion supporting the company's position. This brought the issue directly before the Federal court and it was heard by three judges, who rendered decision on March 9.

The interesting part of the decision was that the company's claim of the rates being confiscatory was not even discussed, the court taking the position upheld in numerous U. S. Supreme Court decisions and many of the lesser court decisions over a long period of years, that rates should be based upon reproduction cost rather than historical cost. The rates named by the Commission in fixing the $2,100,000 reduction were based upon the historical method of arriving at values.

A the same time the suit was brought by the company it was agreeed that the reduction, if it were finally upheld, should apply as of the date of the order. In consequence P. G. and E. has impounded in excess of $5,000,000 which this court decision determines belongs to the company.

While it is believed generally that the case will now be dismissed there is still the possibility that the Commission will carry its suit on to the United States Supreme Court.

In announcing the rate reduction, President Black pointed out that conditions have changed in two particulars since 1933, when the rate reduction was ordered. First, the company was then in the midst of the depression. Revenues were at a low ebb and collections were bad. It was impossible to look into the future with any degree of certainty and the company was forced to take every means at its command to maintain its revenue and conserve its resources. Economic conditions have since improved and there has been a considerable increase in the business of the company.

Second, P. G. and E. has now recovered the extraordinary expense encountered in introducing natural gas. This "cut over" expense amounted to $2,800,000. The recovery the company has had was credited by President Black largely to an intensive campaign for new gas sales carried on throughout the depression.

Under existing rates P. G. and E.'s customers are saving $8,000,000 a year as compared with the use of manufactured gas. The reduction now proposed will increase this annual saving to $10,500,000.

The specific rates and schedules to be applied under the new reductions will be worked out by May 1.

Texas Chain Store Tax May Restrict Merchandising

THE chain store tax bill recently passed by the Texas State Legislature, if upheld by the courts will cut heavily into merchandising activities of Texas utilities. As originally passed in the house, the bill exempted utility companies doing a merchandising business, but the senate included them in another section of the bill and the house concurred. The tax starts at $1 per year for one unit and works up to $250 per unit for 20 to 35 units, and $750 per unit for 50 or more stores.

The bill was to become effective January 13, but the collection of taxes was halted by district court order January 11, which granted temporary injunctions in two suits filed by 15 operators of 827 chain stores who claimed that their annual tax would be $716,817.50. The plaintiffs assert that the bill is a violation of both the Texas and United States Constitutions and that its purpose is to deal a death blow to chain store operations.

Texas utilities have already taken steps to avoid the additional expense of the chain store levy. As announced in *Western Gas* for March, Community Natural Gas Co., which operates in some 250 Texas towns, has reduced the number of its merchandising stores to 39 and has cancelled 73 merchant-dealer connections, in order to come within the $250 per store bracket under the new bill. Even with this curtailment of its merchandising activity, Community Natural would have to pay an annual state tax of $9,750 for the merchandising privilege. However, under a certain construction which might interpret the bill to hold utilities responsible for taxes on displays maintained by merchant dealers, with its former number of stores the company's tax would have amounted to $90,000 per year.

Community Natural has closed its district merchandise stores at Albany, Baird, Teague, Clarksville, Sulphur Springs, Handley, Georgetown, Colorado, Belton and Athens. The company's merchandise displays have been discontinued at Iowa Park, Strawn, Honey Grove, Mesquite, Groesbeck and Hamilton.

Electric utilities also are closing merchandising units to avoid the heavy tax penalties. One electric company operating in West Texas has closed 23 merchandising offices which had been grossing approximately $80,000 per year, leaving 35 points open.

Restraining Order Issued on Federal Hydro-electric Projects

A TEMPORARY restraining order, halting Federal participation in the Colorado River and Brazos River projects, was issued by Justice Oscar Luhring of the District of Columbia Supreme Court on March 6. The bill of complaint was filed by Dallas Power & Light Co., Texas Electric Service Co., Texas Power & Light Co., Texas Utilities Co. and Community Public Service Co.

The suit maintained that the PWA is departing from the original aim of the two districts, that of flood control, in building dams for hydro-electric power production, and that unless the relief sought was granted the plaintiffs' business would be irreparably injured, damaged or destroyed with the result that each company would suffer pecuniary loss amounting to many millions of dollars.

The plaintiffs further maintain that since the Colorado and Brazos River projects are primarily designed for hydro-electric power production, their function as flood control and irrigation agencies is defeated. This statement is based on the fact that high water levels must be maintained in the dams at all times for power production, thus offering no check in the flood season and necessitating conservation of the water behind the dams during the dry season when it is needed for irrigation.

Wagget Appointed Commercial Manager of Community Pub. Serv. Co.

Calvert C. Wagget, assistant to the commercial manager of the Community Public Service Co., Fort Worth, Texas, was recently appointed commercial manager. Mr. Wagget is a native of Canada and is an electrical engineer by education and early experience. He entered the Texas public utility industry in 1927 doing switchboard work, later trouble shooting assignments in power plants and in 1932 was transferred into the accounting department. In February 1934 he was made assistant to the commercial manager.

Mrs. W. M. Thompson Passes Away

Mrs. W. M. Thompson, wife of W. M. Thompson, president of Reliance Regulator Corp., died on March 22. Mrs. Thompson was well known to members of the Pacific Coast gas industry, having taken an active part in connection with ladies' entertainment functions at numerous Pacific Coast Gas Association conventions.

Candid camera catches Harold Mueller, president of L. J. Mueller Furnace Company, Milwaukee, Wisconsin, talking over the 1936 heating outlook with Mr. Hugo Tesch, prominent Milwaukee heating man.

Hi-Hat Heat for Plain Folks

EVERYBODY I talk to says that 1936 will be a whopping big year for the heating business. All of a sudden people seem to have decided that they will build new homes or dress up the old ones.

Well, it's about time that folks in the building business and allied trades got a break. But I have a hunch that people are a lot smarter about building and remodeling now, since they have been burned by that old depression.

They're going to make their money do double duty. They won't be content to buy the first thing they see. They will shop for values. You can depend on that.

That's where we and our customers come in. People know that Mueller furnaces and air-conditioning equipment are honest products. We have always done our level best to build good merchandise—price it right, give the customer a break and the owner more than his money's worth.

Lots of fellows say that we lean over backwards. But that policy was started by my grandfather 79 years ago. And it has worked awfully good through several depressions—and I'm sticking to it.

THE NEW MUELLERAIRE—a great Load Builder—opens tremendous market among stores, shops, showrooms, garages, small factories, and other buildings which do not have a central plant. The Muelleraire is a gas-fired space heater portable, and beautiful in appearance. We are mighty proud of this Muelleraire and its popularity. The Muelleraire heats, filters and humidifies the air and distributes it throughout the space by forced circulation. Floor-level return insures warm floors.

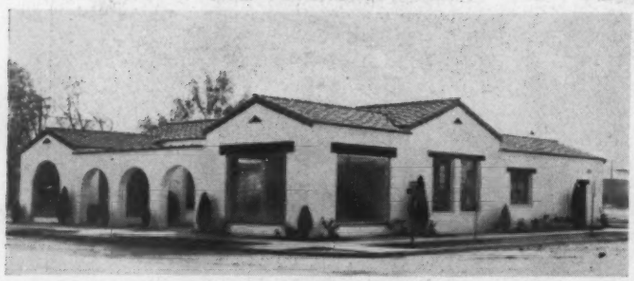
Today we are ready with the greatest line of heating equipment you ever saw. Any piece of it is fit for the most high-hat buyer, but it's all priced for plain folks.

Write me today. Let me tell you about our newly styled furnaces, the new Muelleraire space heater and our new Climator equipment. Learn about our new styling of air-conditioning equipment, and, of course, the standard line of Mueller Gas Era Furnaces. We're ready to go places in 1936 and believe me, brother, it would be a pleasure and a privilege to have you come along.

H. J. Mueller.

PRESIDENT

MUELLER-MILWAUKEE



"Southwestern Spanish" is the style motif for Central Arizona Light & Power Co.'s new office at Glendale, Ariz., seen at the left.

Attractive Glendale Office Building Now Complete

CENTRAL Arizona Light and Power Co.'s recently completed district office building in Glendale, Arizona, is one of the most modern and attractive in the Southwest. "Southwestern Spanish" in style, it is built of brick, painted white with a red tile roof.

An arched, flag-stoned patio forms the center of the building and square, projecting display rooms flank this patio on either side. These display rooms constitute the outstanding feature of the building, being large enough to permit the display of an entire model kitchen or dining room. The larger room, 17 by 17 feet, has three plate glass windows while the smaller one, 12 by 17 feet, has two large windows.

Back of the patio and the display rooms is a combination office and general display room, some 60 by 25 feet. In addition to this large room, there are a small private office for the district manager, a model kitchen and warehouse space. The grounds and the patio have been attractively landscaped and the whole is effectively flood-lighted at night.

The building was erected at a cost of $15,000 and its construction and formal opening marked the completion of a program of expansion in Glendale which included the extension of the natural gas transmission line from Phoenix to Glendale and the installation of a gas distribution system in the town which will probably be serving a total of 250 customers before the close of the year.

Party Politics Invades Appliance Prospect Drive

IN a prospect campaign launched March 2, the Western United Gas & Electric Co. of Aurora, Ill., is bringing a political party into being called the "Food Preservation Party," functioning in the "State of Good Health."

All prospects are members of the party and election to office depends upon the number of prospects secured or votes won at the rate of 100 votes for every prospect. The employee turning in the most votes is elected to the post of Governor, with the second largest number winning the office of Lt. Governor. The District supervisor polling the largest percentage of quota is elected U. S. Senator. Employees polling the third, fourth, fifth and sixth largest number of votes are elected Secretary of State, State Auditor, Attorney General and State Treasurer, respectively.

The group leaders whose groups poll the largest and second largest number of votes become U. S. Congressmen at Large, with the title of State Committeeman being given to the District prospect supervisor whose district polls second largest percentage of quota.

The group leader in each district whose group polls most votes becomes U. S. District Congressman, with the employee polling the largest number of votes in each district being elected State Senator. The next three highest employees in each of the five districts are elected State representatives.

Merchandising awards are also given in the campaign, the top award being $50, going to the employee elected governor. Other awards are Lt. Governor $35, U. S. Senator $30, Secretary of State $25, State Auditor $20, Attorney General $15, State Treasurer $10, U. S. Congressmen at Large $20 and $10, State Committeemen $20, U. S. Congressmen $10, State Senators $6, State Representative $5.

All party workers who secure as many as 10 prospects entitling them to 1,000 votes are eligible to attend the big inaugural dinner which will be held on April 16 as a climax to the campaign. Guests at the dinner will be seated in order of votes polled. Following the prospect campaign a drive will be made on sales.

Appliance Counselors Are Effective Salesmen

In 1935 the staff of appliance counselors of the Los Angeles Gas and Electric Corp., working under the direction of Jessica Taylor, supervisor of displays, was responsible for $200,000 in appliance sales which were routed through dealers. The company's eight appliance counselors work in five district and headquaters offices from the sales floors and are in charge of appliance displays in the several locations.

Service May Be Refused New Customers

A legal situation somewhat unique in utility experience has arisen in Baker, Ore. The Eastern Oregon Light and Power Co., which serves gas in Baker, applied to the state utilities commission for permission to refuse to serve new gas customers, pending the gradual liquidation of the company's gas business in Baker, and a favorable decision was handed down.

Perkins Superintendent of Gas Dept. for San Diego Consolidated

D. H. Perkins, superintendent of distribution for San Diego (Calif.) Consolidated Gas and Electric Co., last month was appointed superintendent of the gas department. Mr. Perkins' appointment to this position marks the creation of a new office in the company. This change in the gas department organization was made following the recent death of J. A. Harritt, superintendent of gas production, which is reported elsewhere in this issue.

D. H. PERKINS

Other changes in the department are the appointments of R. A. Chambers, who was assistant production superintendent, as general foreman of the gas plant, and of W. E. Burke, master mechanic, as his chief assistant.

Mr. Perkins entered the employ of San Diego Consolidated in 1914 in its electric meter shop. In 1920, after his return from army service during the war, he was transferred to the gas department. In 1923 he was made superintendent of gas distribution.

Mr. Perkins was Pacific Coast Gas Association Technical Section chairman in 1932 and has been a member of the Association for 12 years.

Oklahoma Natural Refinancing Plan Under Consideration

A REFINANCING plan, which would distribute ownership of the $50,000,000 Oklahoma Natural Gas Co. among several investment firms, is being considered by directors of the company. Under the plan the group of investment companies would acquire 83 per cent of Oklahoma Natural's common stock through the purchase of a considerable amount of stock of the Gas Utilities Co. which owns Oklahoma Natural. Distribution of the stock among the group of investment companies would provide that no one of them would own or control as much as 10 per cent of the voting control.

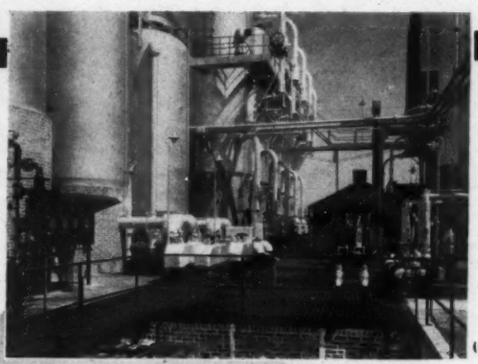
The investment group is composed of the following companies: Stone and Webster, Inc.; Niagara Share Corp.; Schoelikopf, Hutton and Pomeroy, Inc.; Blyth and Co., Inc.; Kidder Peabody and Co.; Bosworth, Chanute, Loughridge and Co.; Trail and Middleendorf, Inc.; and Pennsylvania Investment Co.

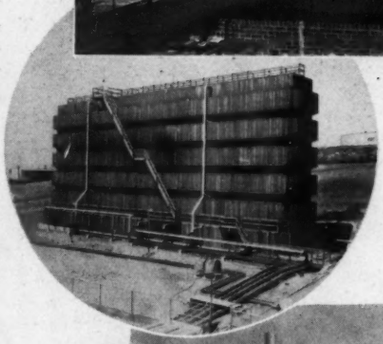
Hostetler Resigns from Portland Gas & Coke

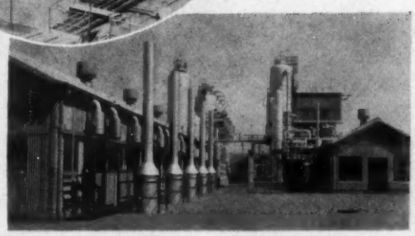
William D. Hostetler, manager of residential sales and manager of sales promotion in the commercial department of the Portland (Ore.) Gas & Coke Co. since September 1, 1934, resigned his position on February 15 to engage in the wholesale distribution of gas appliances and other equipment. Mr. Hostetler has organized the Allied Distributing Corp. of which he is president and general manager. He will handle sales in Oregon for the Spark gas ranges and circulating heaters manufactured by Hammer-Bray Co., Ltd.

A COMPLETE ENGINEERING AND COSTRUCTION SERVICE ...EMBRACING ALL GAS COMPANY BUILDING PROJECTS

BE SURE WITH FLUOR







Our designing, engineering and construction service to the gas industry is securely founded on 45 years of experience. During this time we have continually satisfied the industry's technical demands for thorough and competent workmanship.

Assuming full responsibility, the Fluor Corporation designs, constructs and installs either in part or their entirety all gas company building projects. This organization has also developed three outstanding products which have gained the acceptance of gas company engineers everywhere. They are: Fluor Aerator type Cooling Towers, Fluor Gas Cleaners, and Fluor Air-Cooled Mufflers. Because of the efficiencies with which they perform and the economies which they effect, they are being included in gas company construction and modernization programs the country over.

Your request for descriptive bulletins and further information on Fluor service and Fluor products will receive prompt attention.

FLUOR CORPORATION
• LTD •

909 EAST 59th ST., LOS ANGELES, CALIF.

909 McCormick Bldg. Chicago, Illinois
3162 Edwards St. Alton, Illinois
220 East 42nd St. New York, New York
1406 Esperson Bldg. Houston, Texas
719 McBirney Bldg. Tulsa, Oklahoma

Illustrating Fluor construction. Top —propane dewaxing plant. Center—Aerator type cooling tower. Bottom — a battery of air-cooled mufflers.

As constructors, Fluor service includes the designing, engineering and construction of natural gas compressor plants, of which the illustration is typical.

PROGRAM FEATURES AT NEW ORLEANS SALES MEETINGS REVIEWED

UNDER the head "Charting the Sales Course" *Western Gas* last month reviewed two of the American Gas Association Sales Conferences—the Eastern and the Mid-Western meetings. The report below covers numerous papers on the program of the third conference, held in New Orleans in conjunction with the annual meeting of the Southern Gas Association.

Sales sessions at New Orleans were presided over by C. B. Wilson of Little Rock (Ark.) Gas and Fuel Co., who was chairman of the sales council in charge of the conference. The meetings brought out an attendance of 250, and the conference, staged against a colorful Mardi Gras background, was a much enjoyed affair.

C. B. Gamble, of Birmingham Gas Co., as president of the Southern Gas Association, presided over general sessions. His president's address which introduced the meetings was followed by a report from H. E. Meade, vice-president of the Southern Gas Association and general sales manager of New Orleans Public Service, Inc. Mr. Meade reviewed a plan of sectional organization which has been in operation during the past year to promote interest in Southern Gas Association activities. Mr. Meade directed the plan, which involved appointment of the following nine sectional chairmen:

L. T. W. Timberlake, Durham (North Carolina) Gas Co.

E. C. Kollock, Atlanta (Ga.) Gas Light Co.

R. F. Daugherty, Jacksonville (Fla.) Gas Co.

H. G. Bonner, Knoxville (Tenn.) Gas Co.

W. A. Hudson, Birmingham (Ala.) Gas Co.

W. McEnnis, Memphis (Tenn.) Power & Light Co.

Les Taylor, Mississippi Power & Light Co., Jackson, Miss.

C. K. Patton, Dallas (Tex.) Gas Co.

Dean Strickland, United Gas System, Houston, Texas.

The above chairmen were responsible for keeping association officers in touch with the industry's problems in their respective localities, encouraging membership in the association, and in general, serving as contact representatives for the association program.

During its first year the sectional organization plan has been attended with much success, and Mr. Meade who now heads the Southern Gas Association as president for the new fiscal year, indicated that it would be continued on an enlarged scale.

Sales Conference program features are summarized in some detail below:

Economics of Long Term Appliance Financing

Speaking on the practical aspects of long term appliance financing, S. D. Maddock, vice-president of the Commercial Investment Trust, Inc., New York, N. Y., ascribed the unprecedented expansion in the economic life of this country to the development of, first, production credit and, second, consumer credit. He further pointed out that consumer credit is not a haphazardly contrived method for arbitrarily selling more goods regardless of sound principle, but is the natural outgrowth of an economic demand, based securely on the fact that the durability of the merchandise, for the purchase of which it is granted, is ample collateral security for the debt. Long term production credit and consumer credit are predicated on the same principles.

As regards the sale of appliances, wherein the utility, the manufacturer and the retailer are involved, in most instances each has pursued a separate course, without consideration of the others. All appliance selling agencies in a territory should be put under a uniform financing plan supported by the utility, the latter having everything to gain and nothing to lose by giving the appliance trade participation in load-building campaigns on the same terms as used in its own merchandising. The retailer is the dominating factor in the placement of appliances on the lines. The average appliance retailer, however, is not in financial position fully to exploit his market unaided. A survey among 5,000 appliance dealers in 1935 showed that 72 per cent considered the problem of financing installment paper second in importance only to that of hiring salesmen. Four out of five prospective purchasers of appliances will want to buy on credit, and the dealer's sales will always be restricted if he is without adequate financial backing. Therefore, if the utilities expect to profit fully by this avenue to increase domestic load and particularly to penetrate the vast potential market existing in the lower income classes, they should furnish the dealer long-term credit assistance.

Air Conditioning

Carl Dean, Oklahoma Natural Gas Co., Tulsa, Okla., confined his remarks chiefly to summer air conditioning, stating that local conditions govern the choice of equipment. When low temperature water is available at a reasonable rate it is a simple matter to install a dehumidifying unit to transfer the latent heat to sensible heat and handle the sensible heat load by circulating the water through fin tube coils and pass the air over these coils. In a hotel application where the compressor was overloaded, a dehumidifier was installed to handle the coffee shop. Water at 60° F. was available for 6 cents a thousand gallons. This water is used in cooling coils to remove the sensible heat from the air, and is then used to cool the compressor. The owner thereby added 7 tons to his available refrigeration, at an additional operating cost of ¾ H.P. electric energy and 100 cubic feet of gas per hour. Another application of a dehumidifier in conjunction with a vapor compressor uses a gas engine to operate an electric generator which in turn drives the compressor.

In localities where the water temperature is over 70° F. it is the general thought that dehumidifiers are not practical for moderate sized installations, as the additional cost of a compressor or other refrigerating equipment make the initial cost too high for competitive purposes.

Year round residential air conditioning received an impetus last summer with the announcement of an absorption refrigeration unit using low pressure steam. Steam requirements are 19 lbs. per hour per ton at 10 to 12 pounds pressure. Electric energy per ton of 75 to 100 watts is required. Seven different sized units are available, ranging in capacity from 4 to 35 tons.

The vapor compressor has been generally accepted by the public as the logical source of tonnage refrigeration. During the last few years hundreds of automobile engines with natural gas carburetors have been used to operate generators for electric energy, and in many cases this power is used for motor driven compressors for air conditioning. The next logical step is the elimination of the geneator and electric motor. A railway air conditioning self-contained refrigerating unit has been developed consisting of a heavy duty four cylinder V-type refrigerant compressor using "freen," connected to the engine by an automatic, inertia-operated, three-shoe expanding clutch with power transferred by multiple V-belts; two tubular condensers, and a fan. The whole is assembled within a cabinet lined with sound-absorbing materials. The manufacturer claims more than 20 hours continuous engine operation from 23½ gallons of propane. The capacity for air conditioning is 7 tons. This indicates a B.t.u. requirement of approximately 15,300 per ton per hour, propane being rated at 21,600 B.t.u. per pound with a weight per gallon of 4.2 pounds. The unit is fully automatic and constantly responsive to thermostatic controls. The equipment will be manufactured in sizes from 5- to 100-ton capacity. The engine can also be used to operate a pump for the cooling tower, where such equipment is necessary. An evaporative condenser has been announced to eliminate the use of the cooling tower.

Cost of equipment will limit the summer air conditioning load to commercial, industrial and the highest class residential customers until volume production reduces the first cost of installation. In the meantime the public should be educated to the merits of winter air conditioning, insulation to reduce operating costs, and the wisdom of installing winter air conditioning equipment adaptable to later addition of units for the summer use.

(Turn to Page 30)

A LOW Priced Control for LOWER Cost Gas Heat Through LOWERED Night Temperature

THE MINNEAPOLIS-HONEYWELL Time-O-Stat gives your customers the advantages of lowered night temperature with resultant fuel economy at a low price. A simple twist of the fingers before retiring or leaving the home unoccupied reduces temperature to a fuel saving basis and sets the Time-O-Stat so that it automatically restores the heat level at the hour selected. Time-O-Stat control is simple, dependable and economical. It can be used with any new or existing Minneapolis-Honeywell non-clock thermostat installation at a surprisingly low cost. Minneapolis-Honeywell Regulator Company, 401 East 28th Street, Minneapolis, Minnesota. Branch and distributing offices in all principal cities.

TIME-O-STAT

A twist of the fingers at night and the Time-O-Stat reduces temperature to desired level, and automatically restores it in the morning.

Dependable Controls Cost Less Than Service

MINNEAPOLIS-HONEYWELL

Control Systems

BROWN INSTRUMENTS FOR INDICATING, RECORDING AND CONTROLLING

Selling Automatic Gas Hot Water Service

Results obtained from the inauguration of a rental-purchase plan for automatic storage water heaters were described by J. B. Hodge, sales manager, Baton Rouge Electric Co., Baton Rouge, La. This company serves natural gas at 70c per M.c.f. to about 6,000 residential customers in Baton Rouge.

To keep the gas operations on a profitable basis, it was found necessary to increase sales to existing customers without extending the underground facilities, and the vehicle decided upon was the automatic storage gas water heater.

The company already had achieved a storage water heater saturation of 27 per cent (which was above the national average) as a result of previous sales campaigns, and the remaining potential customers could either not afford outright purchase or large monthly payments, or were renters and did not like to make the investment in the face of possible moving to other premises. An easier means of purchase was indicated as necessary and the rental-purchase plan evolved. Briefly, the plan was nothing more than a 60-month easy-payment plan, with purchase resulting for the customer who made all his payments.

The plan succeeded beyond expectations, so that during the period from November 1, 1933, to December 31, 1935, 1,334 storage water heaters were sold, increasing the saturation from 27 to 46 per cent. Reversions have amounted to only 3.2 per cent for all causes. Another 3 per cent have been converted into cash sales.

It is very important to enlist the cooperation of the plumber, so that he is interested in selling automatic gas water heaters to every building he works on.

Use the Dealer's Load-Building Assistance

The task of the utilities, according to J. W. Moore, Colonial Home Furnishings Co., New Orleans, La., is fundamentally to sell their product, which in turn depends upon the number of appliance units sold. Since the retailer handles about 65 per cent of all the appliances sold, he should be recognized as the utilities' most valuabe partner. He is a partner who admittedly is not doing all he could to further the sale of appliances and a partner who, in many instances, needs teaching, nursing and inspiration. Results already obtained, however, should offer unquestionable proof that he can if aroused to some of his opportunities and relieved of some of his shackles, keep the utilities busy laying pipe lines.

Automatic Gas Heat

Dean A. Strickland, United Gas System, Houston, Texas, spoke chiefly on automatically controlled house heating equipment, stating that the trend to automatic control has brought a considerable quantity of such equipment into use during the past year. This trend is most noticeable in warm air furnaces and floor furnaces. The smaller and more compact heating units can be installed in almost any convenient location in basement, first floor or attic. Furnaces may now be equipped with forced air filters and automatic room controls.

During 1935 Mr. Strickland's company devoted advertising and sales efforts primarily towards an aggressive campaign on automatically controlled floor furnaces and circulators around the slogan, "Controlled Winter Comfort." The campaign was the most successful in its history, 1,320 units being sold.

Model Kitchen Sales Aid

It is not only necessary for a gas company to show the housewife what gas will do for her, but also to show the housewife and her husband what the company in back of that service is desirous of doing to make their relations with the gas company pleasing. As described by R. O. Berry, Jacksonville (Fla.) Gas Co., this company inaugurated a model kitchen, constructed on the sales floor, as a means to this end.

The local merchants were invited to contribute to the construction and furnishings of the kitchen, in return for the advertising of their wares, and cooperated enthusiastically. Newspaper advertising, to which these merchants contributed, was used to announce the kitchen, in addition to announcement cards in windows, and envelope stuffers. Subsequent to the opening, a 15-minute daily radio program has been sufficient to sustain interest, the kitchen being, for the most part, its own advertiser.

Appliance sales immediately increased, and continued good throughout a long hot summer. This is directly attributable to the influence of the kitchen in intriguing and educating the feminine visitors. Perhaps the greatest advantage, however, was the fact that the kitchen furnished the sales force with something new, and some place to bring customers for actual demonstration.

Employee Sales and Prospect Development

The employee plan used by the Southern Union Gas Co., with headquarters in Dallas, Texas, was explained by C. H. Zachry. At the outset of employee selling in 1934 his company was distributing natural gas through five subsidiary operating companies to 10,244 meters located in 25 towns of 12,000 to a few hundred population each.

Southern Union's plan is best described as employee cooperation rather than employee sales. Regular salesmen, or persons whose duties include selling, make all sales and receive all remuneration which is paid for making all sales. The employees, other than sales-people, participate in the sales through original contact and are rewarded for all of their contacts which ultimately result in sales, no matter who actually closes the sale. Two assumptions form the fundamental basis for this plan: First, that a more enthusiastic and enduring response will be secured from anyone, in doing work outside his regular employment, if he is paid for it; second, that regardless of how willing an employee might be to sell, not everyone has that peculiar ability necessary to close a sale and get the customer's name on the dotted line.

Points are awarded to all employees who secure and personally contact prospects which result in sales, as a result of a Prospect Card turned in. Gas consumption of the appliance sold is the chief consideration, the schedule being as follows:

	Points
New meters (new services)	10
Reconnected meters (off lines 6 months or more)	6
Unit heaters, central furnaces, or conversion burners	4
Water heaters, circulators, floor furnaces or ranges	3
Electrolux or space heater	2

Before the campaigns were begun, a complete survey and house-to-house canvass of every user and non-user of gas in each town was made and all pertinent information concerning each prospect was secured. This information was available to all employees.

A series of contests were inaugurated about the middle of 1934. In a three months campaign beginning July 1, 1934, $85,130.60 of merchandise was sold, representing an increase over the same period for the preceding year of 328 per cent. Several Grand Prizes were given, and regular awards of 10c per point were paid on all successful contacts. A second contest, from October 1 to December 15, sold $136,572.82 of merchandise. This was more than four times the amount sold in the preceding six months. During the two campaigns, lasting 135 days, 1,421 new meters were connected. Another of the contests, called the "10-Day Red Tag Sale," selling merchandise on three-year terms, disposed of $122,176.27 of merchandise in the 10 days, and secured 500 new meters.

Based upon meters at the beginning of the 15 months period, approximately $40 of merchandise was sold per meter; 72 per cent of the appliance sales replaced coal, electricity, wood, oil or some other fuel than gas. For the 18 months ended December 31, 1935 the company increased its meters by 5,475, or about 50 per cent.

While operating expenses increased as a result of these activities, part of the increase was due to connecting the new customers and increased sales activities reflected in the 20 per cent increase in revenue from gas sales. The percentage of delinquent accounts has decreased since the commencement of these sales activities, because of carful handling in billing and collection.

Industrial Forum

Another feature of interest on the program at the meeting was an Industrial and Commercial Forum conducted on the afternoon of February 21 by J. M. Clann, research engineer with New Orleans Public Service, Inc. The subjects discussed at the forum were (1) Maintenance policies as related to burner equipment, (2) Gas designed equipment vs. conversion jobs, (3) Small boiler conversion experiences, (4) Conversion factors: determination and use of, and (5) Gas air conditioning and dehumidifying experiences.

Champion Elected to Directorate

Fred Champion, assistant secretary and treasurer of the Southern Counties Gas Co., Los Angeles, associated with the company since 1913, was elected a director of the concern at the annual meeting of stockholders March 18. Other officers and directors were re-elected.

UNIVERSAL Brings

GAS BROILING UP TO DATE . . .

The Manchester Universal, with its elevated In-A-Drawer Broiler with Savory Smokeless Grid, presents a new convenience of operation and a definite advancement to the art and method of broiling. It offers the further advantage of six Simmer-Save top burners.

BROILING is a division of cookery in which gas as a fuel gives outstanding advantages. Yet broiling, because of the many objectionable features associated with the use of the ordinary and outmoded gas range broiler, is practically the forgotten method of cookery, as far as the average American Homemaker is concerned.

The Universal, with its modern broiling equipment, offers the gas industry the opportunity to popularize the greater use of broiled foods in the average home, and in so doing, it offers the further possibilities of opening up a new field of revenue.

The elimination of smoke, odor, burns, firing of greases, inconvenient operation—ease and safety of use, improved flavor, more palatable foods—this, in brief, is the story of the modern simplified broiling service that the Universal makes possible for the Gas Utility to present to its customers.

In all divisions of cookery—Top Burner, Broiling Oven—Universal promotes new and higher standards of cooking performance. The Universal elevates gas service to its highest plane of convenience and modernity—making for more satisfied and more friendly gas consumers.

Broiling is a subject that is receiving more and more attention and consideration from dietitians, food authorities and the medical profession, because of its greater health-giving qualities and greater palatability.

Men like broiled foods—especially broiled steaks.

But women fry, because from past experience they believe it to be faster, more convenient and less difficult.

Now Universal offers the opportunity to tell the Homemaker the story of modern gas broiling—broiling can be popularized because it is quick, convenient, and gives more healthful and palatable foods. In promoting broiling, the Gas Utility promotes a more modern and a more convenient gas service.

UNIVERSAL Gas Ranges

MANUFACTURED BY CRIBBEN & SEXTON COMPANY, 700 N. SACRAMENTO BLVD., CHICAGO, ILLINOIS

AT LEFT

A view of the Community Public Service Co. portable model kitchen.

AT RIGHT

Interior of the traveling demonstration kitchen with an all-gas installation.

Trailer Used To Demonstrate Model Gas Kitchen

COMMUNITY PUBLIC SERVICE CO., headquartering at Fort Worth, Texas, has a demonstration trailer that is a model kitchen on wheels capable of being equipped for either all-gas or all-electric demonstration. The above interior view of the trailer shows an all-gas kitchen installation consisting of an Electrolux refrigerator, Roper gas range and Rex water heater. Provision is also made for a space heater when one is desired. The fuel used is propane, a cylinder of which is housed in the rear of the trailer.

The trailer interior embodies a complete kitchen. In addition to the appliances it is equipped with a Monel metal sink, an electric dishwasher, and ample cupboard and shelf space.

R. A. Grogan and Miss Isabel Herndon recently took the trailer to Breckenridge for one week of demonstration during which time over a thousand persons visited the model gas kitchen. Several gas range sales resulted and a number of customers requested recommendations on their kitchen arrangement. Several water heater prospects were obtained also.

Los Angeles Gas Companies Liberalize Discount Schedule

THE terms of the discount schedule, made effective February 15, for the three Southern California gas companies that headquarter at Los Angeles (Los Angeles Gas and Electric Corp., Southern California Gas Co. and Southern Counties Gas Co.), on February 24 were considerably broadened. The original schedule, as covered in *Western Gas* for January, provided for a 15 per cent discount on that portion of the monthly gas bill between $2 and $25 if the customer (1) uses a gas range for his principal cooking requirements and the range has not less than four top burners and one oven, (2) that an automatically operated gas water heater be used for all water heating requirements and (3) that gas heating appliances must have an aggregate hourly input capacity of not less than 25,000 B.t.u. and must be used for the principal building heating requirements.

Under the revised schedule the same discount is applicable so long as the customer uses gas as the principal fuel for (1) cooking with a gas range or stove with built-in oven regardless of the number of top burners, (2) water heating with any installed gas water heater whether automatically or manually operated and (3) house heating with any gas heating appliance regardless of capacity. However, this discount does not apply if the customer has a range or cook stove, water heater or major house heating appliance using a fuel other than gas.

The 15 per cent discount is in effect in all territories served by the three companies with the exception of the San Joaquin Valley and Kern divisions of the Southern California Gas Co. where optional combination rate schedules have been in operation since July 4, 1935.

Miss Kruger Appointed Home Service Director at Phoenix

MISS Ruth D. Kruger, formerly home service director of the Bronx Gas and Electric Co. of New York City, has been appointed home service director of the Central Arizona Light and Power Co.

RUTH D. KRUGER

Miss Kruger has had a wide and varied experience in the home economics field. After her graduation from Coe College, Cedar Rapids, Iowa, she spent four and a half years in Honolulu, first as dietitian of the Kamehameha Schools and later as head of the Women's Department of Palama Settlement, doing nutritional and lecture-demonstration work.

Six years ago Miss Kruger organized the Home Service Department of the Bronx Gas and Electric Co. and continued as its director until she resigned to accept her present position. While in New York, she was secretary of the National Home Economics Association.

The Home Service Department of the Central Arizona Light and Power Co., was organized several years ago by Miss Gladys B. Price, who is now home service supervisor with the Southern California Gas Co. After functioning for three years, the department was discontinued during the worst period of the depression but the company now plans to maintain an even more active Home Service Department than formerly. The four young women who have been handling home lighting for the company for the past two years will act as assistants in the Home Service Department.

The activities planned for this department include active assistance to and cooperation with all local appliance dealers in conducting sales campaigns and demonstrations.

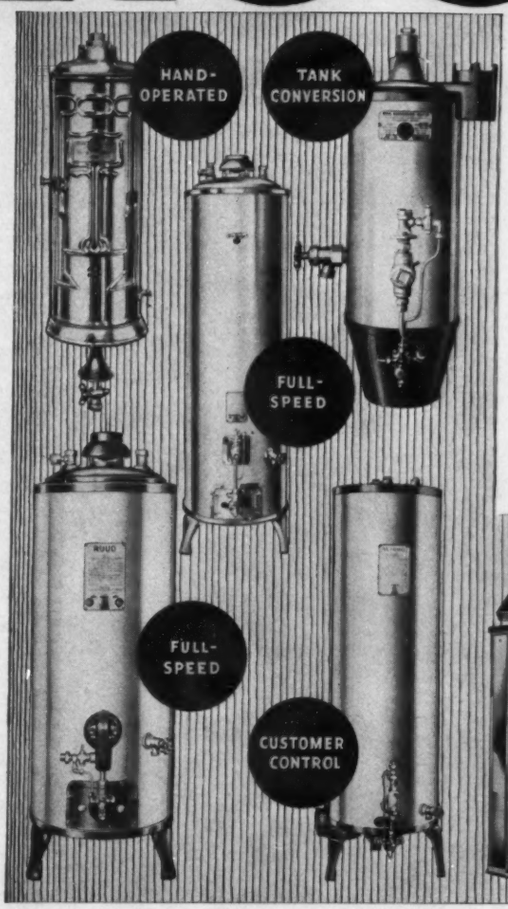
Fluehr and Webster Elected to Illinois Northern Directorate

George B. Fluehr, vice-president, and F. F. Webster of Des Plaines were elected directors of the Illinois Northern Utilities Co. at the annual meeting of the company held in Chicago early in March. The new directors succeed P. L. Smith and George A. Ranney, retiring. Other directors of the company were re-elected. Illinois Northern Utilities Co. is a subsidiary of the Commonwealth Edison Co. and serves gas in Dixon, DeKalb and Sycamore, Illinois.

Texas Companies Will Bestow Novel Reward in Sales Drive

The result of a gas range campaign, participated in jointly by the Texas Cities Gas Co. and the Community Natural Gas Co., which opened March 1 to continue through April 15, will determine which one of the three sales supervisors concerned will be burned in effigy. This novel punishment will be meted out to the supervisor whose territory takes last place in the gas range competition.

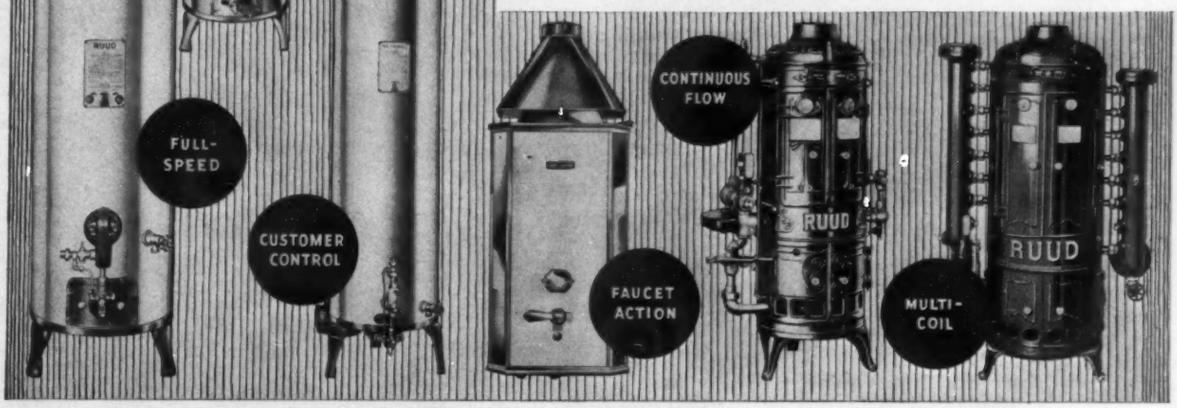
RUUD Low-priced



Check with the RUUD low-priced line of gas water heaters!

A full line! . . . . New models! . . . . Built for all gases! . . . . And for all house sizes and commercial jobs! . . . . Backed by a national sales service and high-grade advertising helps! . . . . LOW-PRICED!

. . . WRITE FOR COMPLETE DETAILS



H. R. BASFORD COMPANY
665 Howard Street
San Francisco, Calif.

RUUD WATER HEATER COMPANY
2018 Jackson Street
Dallas, Texas

J. H. FAGAN COMPANY
161 W. Wisconsin Avenue
Milwaukee, Wisconsin

H. R. BASFORD COMPANY
911 S. Grand Avenue
Los Angeles, Calif.

WM. A. FLATT COMPANY
1031 Santa Fe Drive
Denver, Colorado

EARL G. BURWELL
Casper, Wyoming

NORTHWEST GAS & ELECT. EQUPT. CO.
Public Service Building
Portland, Oregon

RUUD MANUFACTURING COMPANY
820 Carondelet Street
New Orleans, Louisiana

ROBT. THOMPSON
1906 Washington Avenue
St. Louis, Missouri

RUUD MANUFACTURING COMPANY..Factory at Pittsburgh, Pa.

LOW PRICED NEW MODELS

Delegates who attended the second annual Texas Tech Welding Conference which was held at Lubbock, February 13 and 14.

Welding Technique Surveyed at Lubbock

By ED McKEEVER
West Texas Gas Company
Lubbock, Texas*

THE second annual Texas Tech Welding Conference, held at Lubbock, Texas, February 13 and 14, attracted an attendance of 369 from nine states, including Texas, Oklahoma, Kansas, New Mexico, Illinois, Indiana, Ohio, Missouri and New York. The Conference was conducted under the auspices of the Department of Mechanical Engineering of Texas Technological College, and was under the supervision of Professors J. C. Hardgrave and H. F. Godeke.

The purpose of the Conference was to acquaint shop welders, mechanics, general welders, foremen and superintendents with the latest technical developments, methods and progress that are being made in the welding industry, and to show the value and proper application of rods, electrodes, alloys and equipment.

The Conference consisted of lectures which were illustrated with slides and motion pictures, open discussions, equipment displays and demonstrations.

The staff was made up of engineers and representatives from manufacturers and distributors of welding equipment and materials. The lecturing staff included R. W. Van Kirk, General Electric Co.; Robert Notvest, J. D. Adams Co.; F. C. Hutchinson, Linde Air Products; L. C. Monroe, "The Welding Engineer"; H. H. Service, Santa Fe Railway; A. W. Swift, Handy and Harmon Co.; Don Llewellyn, Air Reduction Sales Corp.; C. K. Rickel, Big Three Welding Equipment Co., and H. H. Bassett, Linde Air Products.

Welding may be divided into two principle divisions, plastic and fusion. In plastic welding the parts to be joined are heated to welding temperature after which the weld is completed by the application of mechanical pressure or blows. The most common plastic welding processes are forge welding, as practised by blacksmiths, and the electric resistance process with its subdivisions of butt, flash, seam, spot and projection welding. The second main division, fusion welding, is defined as the process of joining metal parts in the molten or molten and vapor states, without application of mechanical pressure or blows. Fusion welding includes gas, thermit and electric arc processes. Thermit welding has inherent limitations which prevent its common use. Electric arc welding has two general sub-divisions, namely, carbon arc and metallic arc welding.

Welding has proven to be all-important in the oil and gas business as oil field tools are hard-surfaced; pipe lines, oil well casing and even derricks are today joined together and many fabricating problems are being solved through practical welding. Reclaimed pipe can be flame-beveled for use in the well and excessive cleaning of old pipe before welding is not necessary—new pipe can be flame beveled without subsequent machining. Out-of-round pipe and abandoned pipe can also be made ready for re-use.

The backhand technique of welding has become very popular because there is less motion of both blow-pipe and rod. Both can be moved in the same or opposite directions as desired, but must always be in line of the weld. Therefore the hottest portion of the flame is directed almost constantly against the end of the welding rod, increasing the rate at which the rod melts. The art of welding is further improved by the rapid melting of the base metal surface.

A development in the oxy-acetylene field is the perfection of a three flame or multi-flame head. The design of the tip is to give three flames: a main welding flame and two smaller auxiliary flames, the latter positioned so as to preheat both edges of the V ahead of the point of welding. Three sizes of heads are available, their use depending upon the size of the pipe. The preheat and correct technique enable the operator to deposit the weld metal at the bottom of the V solely by manipulation of the blowpipe. With proper technique the surface only of the V is definitely melted.

Hard-facing has become an important factor in the welding industry due to its low cost, increased life, resistance to corrosion, increased efficiency and saving of power. Plow shares which have been hard-faced have been known to last ten times their normal life. The life of drilling well bits has been increased from three to five times when they have been hard-faced. Dredger cutters, with proper hard-facing, will cut a larger percentage of solids, and they have been known to cut up logs or roots of trees into smaller pieces which passed through the pump and pipe lines without detrimental effects. These roots would wrap around a dull and unfaced cutter, finally stopping the dredge for frequent removal of debris. This same advantage of self-sharpening coupled with increased life enabled hard-facing to revolutionize oil well drilling.

Low temperature brazing is probably the best method of joining together different alloys. The importance of low temperature brazing is the saving of polishing, finishing and straightening cost due to the low temperature of the braze. There is less heat damage to special expensive alloys used; there is high strength in the joints, which is obtained at a minimum temperature; and the fact that two widely different alloys such as copper or brass can be joined to stainless steel successfully. A low temperature braze is actually a braze which has been made at from 300° to 400° under the brazing temperature of the bronze alloys.

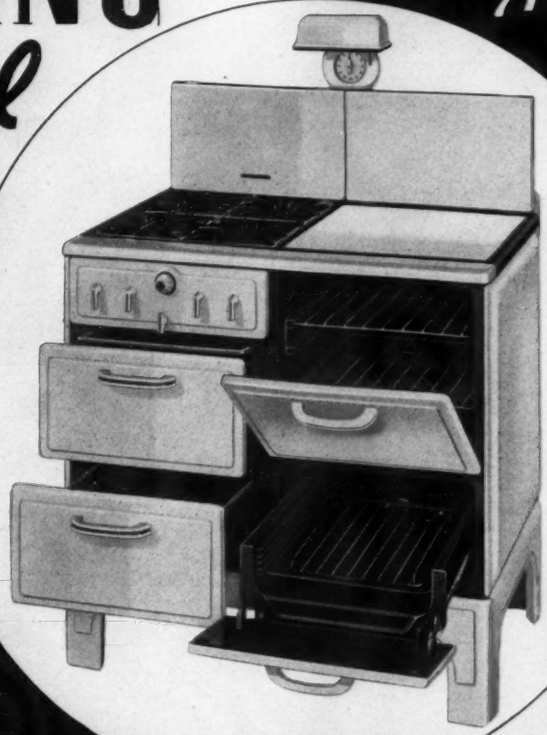
Of special interest is the boiling point or volatilization point of metals, because if it is lower than the boiling point of mild steel, 2630° C., then the physical qualities of the resulting fusion metal will be impaired through evaporation of such essential alloying ingredients. Molybdenum boils at 3620° C.; vanadium at 3000° C.; nickel at 2900° C.; silicon at 2400° C.; chromium at 2200° C.; and manganese at 1900° C.

Results show that the practical deposition rate of a shielded arc electrode is mainly governed by the resistance condition of the gap, and this in turn depends largely upon the thermionic emission effect of the coating ingredients. In a number of instances it is possible to increase the welding speed of a shielded arc electrode by using the same on straight polarity to the detriment of the physical properities of the resulting fusion

* Mr. McKeever's article contains the substance of papers presented at the Conference among which are R. W. Van Kirk, "General Welding Application"; Robert Notvest, "Arc Welding as a Fabrication Tool"; F. C. Hutchinson, "Multiple-Flame Welding"; L. C. Monroe, "Economy and Quality in Welding Through Personnel Training"; A. W. Swift, "Recent Developments in Low Temperature Brazing."

SPRING *Special*

A New **FULLY-EQUIPPED RANGE** *for thrifty buyers*



the price...

$48.50

F.O.B. DETROIT

GARLAND
No. 3674

DETROIT JEWEL
No. 6674

Compare!

Compare this new range with any other on the market . . . for beauty, quality, efficiency, price! What other gas range, at this price, is so complete? And what other gas range, at this price, offers ALL THESE FEATURES: Porcelain top burners, top grates, burner pan and drip pan! The most "even heat" spreading top burners on any range! Lamp and time reminder! Two folding cover tops! One piece, porcelain lined, fully insulated oven! Large, full 20-inch deep roaster! Counterbalanced oven door! Roller bearing drawer broiler! 2 spot welded, roller bearing utility drawers! Convenient oven heat control dial! Chrome trimmed hardware! And many other outstanding superiorities!

These Ranges Available for a Limited Time Only

Here is a sensational range at a popular price! Just in time to not only stimulate Spring business, but to really capture the large popular price market that is waiting for a value like this. Buyers today are looking for reasonably priced merchandise that represents real dollar value; they will pay for quality that is as real as these ranges when backed by a reputable manufacturer. These marvelous models have all the modern improvements known to the gas industry.

WRITE, WIRE OR PHONE YOUR ORDER AT ONCE

DETROIT-MICHIGAN STOVE CO.

Detroit, Michigan

metal; as under such conditions the arc action is wild, too much metal goes across the arc in vapor form causing high splatter losses and the liquid fusion metal cannot be properly degasified. In arc welding speed is not everything, as much depends on the electrode used and the conditions and specific technique under which the same must be applied in order to deposit it in an efficient manner—a strong, dense and ductile fusion metal with minimum injury to the zones of the parent metal adjacent to the weld.

Coarse crystalline structure, which is always indicative of low tensile strength and ductility is caused by overheating the metal, although the coarse grain structure can be reduced through drastic mechanical working with subsequent annealing at proper temperature; through partial annealing and partial chilling after slight plastic deformation, as in the instance of a hot rivet driven into a cold member of considerable size.

A careful technique and a special slag shielded electrode can reduce aging so that it is insignificant for all practical purposes even if the fusion metal is severely cold-worked. It is said that if reliable welding processes could be devised whose weld material was not afflicted with aging tendencies, engineers would in the future feel safe in regard to welds, if the whole structure had successfully withstood stresses.

The important problems of locked up residual stresses caused by the arc welding operations in areas adjacent to the weld must be minimized through correct technique to such low value that it is insignificant for all practical purposes in order to enable the safe extension of the arc welding process in the construction of buildings, bridges, pipe lines, large storage tanks where no annealing or normalizing is possible after the structure or assembly is held, the greater the locked up residual stresses will be produced.

The main reason for using reverse polarity on a majority of the shielded arc electrodes now on the market is the physical fact that approximately 70 to 75 per cent of the thermal energy is liberated on the positive pole thus giving a higher melting rate. In welding a V butt on a 2-inch plate, the chances are there will be a larger pool of molten metal similar to the conditions on which the cathode spot can dance around in erratic fashion, causing considerable arc blow which disturbs and interrupts the shielding atmosphere to the detriment of the resulting fusion metal. The material reduction of both arc blow and magnetic flare is really the only justification for the employment of alternating current for arc welding.

On the average arc welding operation, anywhere from 5 to 50 per cent of the electrode material ultimately deposited as fusion metal may be transferred across the arc gap in vapor form. It is true that arc welding fusion metal is essentially nothing but a special grade of cast steel which we attempt to produce at highly elevated temperatures from 2400° to 3000° C. what the steel foundry does at 1700° to 1900°.

Important factors will be left up to the supervising department, such as methods, changes, specifications, materials and the purchase of equipment, rods, etc. They must know the kinds of weld that can be produced, such as fillet, lap, butt, high or low ductility, etc. They must decide which weld is most suitable; whether it should be of structural grade, Class 1 grade, or tacking grade. They must decide whether the process should be oxy-acetylene, electric arc, or carbon arc, and if electric, whether bare or shielded arc is more suitable and whether automatic, semi-automatic or hand work should be employed. Welding according to specifications should result in fewer locked up stresses and strains. And the supervising department should make a study of safety, especially of the eyes and lungs and of efficient ventilation.

L. W. Johnson Appointed Peoples Gas Domestic Sales Manager

F. X. Mettenet, vice-president in charge of sales of the Peoples Gas Light & Coke Co. has announced the appointment of Lucien W. Johnson as manager of the Domestic Sales Department of the company.

L. W. JOHNSON

Mr. Johnson was formerly sales director of Division Four, having served in this position since August, 1933. Prior to this date he was heating engineer in the Space Heating Sales Department for a brief period. Mr. Johnson was New York manager of Koppers Products Co. before joining the sales department of the gas company. In 1923 he came to Chicago as sales manager of the Philip Carey Co., returning to New York in 1930 as manager of the New York territory for the company.

Mr. Mettenet has also announced changes in the names of three departments coming under his direction. The Industrial Gas Sales Department has been changed to Industrial Sales Department; the New Business Department, to Domestic Sales Department; and the Hotel and Restaurant Department to the Commercial Sales Department.

San Diego Consolidated Orders Pipe for Escondido Line

San Diego (Calif.) Consolidated Gas and Electric Co. has ordered 80,000 feet of new main for the construction of its natural gas pipe line to Escondido. The line will take off at a point about 3 miles south of Oceanside from the Southern Counties Gas Co. transmission line which carries natural gas to the San Diego company's system. Construction of the Escondido line is expected to start about May 1.

Trane Co. Founder Passes Away

James A. Trane, vice-president of the Trane Co., died recently in Los Angeles at the age of 76. Mr. Trane entered the heating appliance manufacturing business in 1886. His son, Reuben N. Trane, is president of the company.

Arrangements Committee Appointed for Midwest Convention

E. J. Boyer of the Minneapolis Gas Light Co., has been appointed general chairman of the Arrangements Committee for the 31st Annual Convention of the Midwest Gas Association which is to be held at Hotel Radisson in Minneapolis from April 13 to 15. The convention is expected to attract delegates from Minnesota, Wisconsin, Iowa, Nebraska and North and South Dakota. Mr. Boyer has appointed the following men to serve on the Arrangements Committee: Louis Stein, J. E. Swenson, Amos Abbott, Chester Lyford and Charles Hoyt, all of Minneapolis, and C. F. A. Schuldte of St. Paul.

E. J. BOYER

F. H. Brooks, of Northern Natural Gas Co., Omaha, is president of the Association; H. M. Smith, of Iowa Public Service Co., Waterloo, is first vice-president; and R. B. Searing, Sioux City, Iowa, is secretary treasurer.

Among the delegates expected to attend the Convention are the following members of the Association's executive council: H. E. Peckham, St. Paul; E. C. Brandt and A. C. Rathkey, both of Waterloo, Iowa; H. R. Pierce, Davenport, Iowa; V. H. Lear, Muscatine, Iowa; R. H. Luscombe, Des Moines, Iowa; T. E. Rooke and T. A. Leisen, both of Omaha, Neb.; Stanley Taber, Lincoln, Neb.; C. B. Dushane, Jr., Chicago, Ill.; and Thomas E. Bullion, Detroit, Mich.

Pittsburg Equitable Production Uninterrupted by Floods

The recent flood waters which descended upon western Pennsylvania, inundating a large portion of the business section of Pittsburgh and demoralizing manufacturing activities for many firms, caused but slight inconvenience at the plant of the Pittsburgh Equitable Meter Co.

The factories, located in the high, eastern residential section of the city, were not touched by flood waters. Only short shutdown was made necessary while emergency equipment was secured to supply power.

During the height of the flood, the company gave 24-hour service to utilities affected by flood conditions, while many employees served with the Red Cross for the duration of the emergency.

Cohen Returns to P. G. and E.

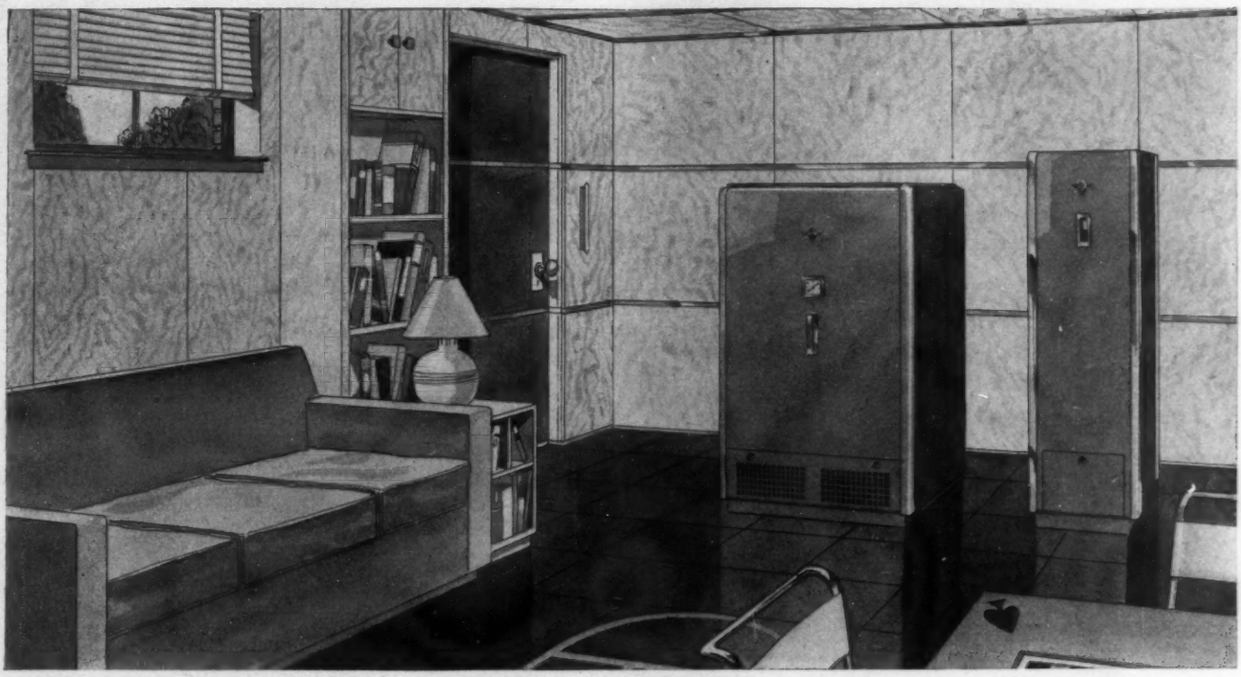
Sylvan Cohen, who was for some time an assistant in the window and floor display department of Pacific Gas and Electric Co., San Francisco, and who left the company's service about a year ago, has returned to the same line of work under Chad Hurlburt, supervisor of display.

Mr. Cohen will help Mr. Hurlburt in the general preparation of window and floor displays, but will have immediate personal supervision of the exhibits in the San Francisco Division office at 447 Sutter Street.

Dependable, efficient, economical

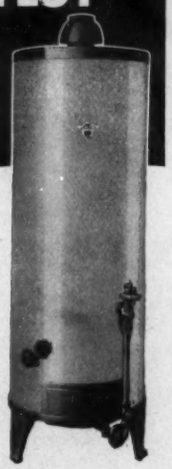
of course...but

Beauty sells them!



AGP *Gas-Fired Equipment meets every home requirement*

Clean up in the
"CLEAN-UP" CONTEST
with AGP automatic, gas-fired Storage Water Heaters



A size for every home, a model for every purse. Here is the new AGP Clipper—outside flue type, with baked enamel jacket and tank of copper bearing steel, galvanized. 5 sizes, 15 to 40 gal.

THIS is the age of Beauty. Almost everything you buy has been styled for greater sales-appeal. So we've styled AGP gas-fired heating equipment . . . created the world's most beautiful gas boiler, the "Empire" Ideal. To efficiency, dependability and all other qualities, we've added *beauty* – that crystalizes desire into a sale.

The "Empire" Ideal is handsome on your floor. But what is equally important, you can assure your customer that it will stay handsome in his home. All piping, including the drafthood and header, is inside or behind the lustrous gray enamel steel jacket. It won't sprout arms or legs to mar the interior that's designed around it. The "Empire" Ideal is handsome furniture for any basement room.

Ideal Gas Boilers are also available in the Standard Model. There is a size for every home . . . a type for every domestic and industrial use. Each one is completely automatic. A new sales and promotion campaign will help you sell them. Write today for the details.

AMERICAN GAS PRODUCTS CORPORATION

DIVISION OF AMERICAN RADIATOR COMPANY

40 WEST 40TH STREET • NEW YORK, N.Y.

Varied Topics at Industrial Gas Sales Conference

THE first Industrial Gas Sales Conference to be held under the sponsorship of the Industrial Gas Section of the American Gas Association was held in Detroit, Mich., on March 10 and 11. The registration showed that men came from 16 states, Ontario and the District of Columbia. The total attendance was over 125. Fifteen manufacturers were present and 17 engineers and industrial plant managers from outside the gas industry. Approximately half the balance of those attending represented natural gas companies and half represented manufactured gas companies. Charles W. Gale, chairman of the Industrial Gas Section, and Ralph L. Manier, vice-chairman, presided at the various sessions.

There were two sessions and a luncheon the first day. The entire theme of the conference was sales and the new industrial gas equipment and new heating processes that are now available to help make sales. This theme was emphasized by the keynote speaker, Frank T. Rainey, new business manager of Ohio Fuel Gas Co., and by most of the other speakers.

A very complete discussion of the various business angles that should govern trial installations was made by F. B. Jones of Equitable Gas Co., Pittsburgh, Pa., in his paper entitled "Effective Methods of Handling Test and Trial Installations." He advocated the use of a revolving fund by each gas company industrial gas department and expressed the opinion that such a fund could be maintained substantially intact over a period of years. He showed a number of instances where the judicious use of trial installations had secured new business and had been instrumental in holding old business.

Two manufacturers of industrial gas apparatus addressed the conference and described some of the newer furnace developments that are entrenching gas as an industrial fuel. These were E. G. de Coriolis, research director of Surface Combustion Corp., and Charles E. Buysse, president of Industrial Heating Equipment Co. Their presentations were supplemented by lantern slides and drawings, which emphasized controlled atmospheres, gas hot tubes and forced convection heat.

The ceramic field, one of the largest heat consuming markets, was discussed by T. E. Wood, industrial manager of the Manufacturers Light & Heat Co. Mr. Wood showed how ceramic firing is gradually being refined, how in many instances unit costs are being reduced, and that as the refinement processes continue gas becomes an increasingly important factor.

In the specialized field of brass and copper manufacture the utmost in refined heating operations is required, it was pointed out by W. W. Young, Jr., of the Connecticut Light & Power Co., in a paper, "New Developments in the Brass and Copper Industry and the Part Gas is to Play in this Industry." Samples of products in the making were displayed, and sales arguments for gas were analyzed in the light of present competitive conditions.

The conference was particularly fortunate in having as the speaker for the "Executive Luncheon" Claude A. Welch, assistant superintendent of the Chevrolet Motor Co. Mr. Welch, an experienced automobile production executive, told how the use of modern gas furnaces contribute toward cheaper, speedier production and enabled certain plant layouts under crowded conditions that were not possible when the older heating methods were used.

In concluding the conference, Hale A. Clark of the Detroit City Gas Co., reviewed heat treating changes in the automobile Industry during the past 10 years. He pointed out that about twice the amount of gas is used in the manufacture of a car now as formerly and that this increase has been coincident with the production of better and cheaper cars. A large amount of the increased gas load in automotive plants is in operations where electricity and oil were formerly used.

Spirited discussions followed the presentation of papers. There was a tendency to favor the practice of industrial gas departments primarily concentrating on plant contacts and sales work, leaving the greater part of the necessary engineering to equipment manufacturers. A number of angles of the competitive situation were handled by men who discussed the papers from the floor.

A display of the publicity and advertising activities of the Industrial Gas Section helped those present to visualize the scope and effectiveness of this work.

Wednesday was devoted entirely to an inspection trip of Detroit industries.

Pipe Ordered For Natural Gas Line To Detroit

COLUMBIA Gas and Electric Corp. has placed an order for some 230 miles of 22-inch seamless pipe amounting to $3,500,000 with National Tube Co. to be used in construction of the natural gas line to Detroit. The line will take off from the Panhandle Eastern Pipe Line Co.'s main trunk line at Zionsville, Ind., to carry Texas gas to Detroit.

Panhandle Eastern, Columbia subsidiary, has awarded a contract to the Cooper-Bessemer Corp. for 14 twin-tandem compressor units. The order calls for 12 units of 1,300 h.p. each and two units of 1,000 h.p. each. The new compressor units will be installed along the Panhandle Eastern line to increase its capacity for natural gas supply to Detroit.

The present system from the Panhandle to Zionsville, which is just north of Indianapolis, is 1,350 miles long. It is expected that construction gangs in the field will start laying the pipe between Zionsville and Detroit as soon as the frost is out of the ground. Work on the first of the 1,300 h.p. compressor units is already under way at the Cooper-Bessemer plant at Mt. Vernon, Ohio, where the major part of the machining and assembly work will be done.

G. W. Stevenson Placed in Charge of American Meter Los Angeles Office

GEORGE W. Stevenson has been appointed sales engineer in charge of the Los Angeles territory for the Pacific Meter Works of the American Meter Co., and A. W. Decker has been appointed sales engineer, also working out of the Los Angeles office. Announcement of the appointments was made last month by K. C. Tomlinson, manager of the Pacific Meter Works. Mr. Stevenson will handle positive displacement meters and other gas apparatus manufactured by the company, while Mr. Decker will contact gas and oil companies with reference to orifice meters and control instruments.

G. W. STEVENSON

A. W. DECKER

Mr. Stevenson was formerly sales engineer for American Meter Company at San Francisco, having entered the company's employ eight years ago. Mr. Decker has been engaged in measurement and control instrument work for the past eleven years, being located in the sales department of Pacific Meter Works' Los Angeles office since 1932. He was formerly connected with Westcott and Greis, Inc.

Customers Office Men Study Appliance Operation and Operating Costs

Employees of the customers office of the Portland (Ore.) Gas & Coke Co. concluded a course in the operation and operating costs of domestic gas appliances, under the supervision of C. R. Johnson, supervisor of the customers office, on March 16. The study course consisted of 10 two-hour evening classes and was presented by George Jennings of the operating office.

About 60 men attended the first three classes which covered company policies and procedure. The rest of the classes were devoted to the study of appliances and were conducted as informal study groups, the men gathering about the appliance under consideration. These groups were reduced to about 30 men and studied ranges, range controls, water heaters, refrigerators, house heating and thermostatic control.

Marshall Made Penn Mid-West Representative

R. Douglas Marshall, sales engineer with Penn Electric Switch Co., Des Moines, Iowa, for the last year, has been named midwestern representative, in charge of sales in the area served by the Des Moines office. Mr. Marshall will devote his time to Penn heating, refrigeration, air conditioning, pump and air compressor controls.

No rust to check gas consumption when the tank is *non-rust* EVERDUR

When you advocate the sale of heaters equipped with Everdur Tanks, you not only promote your own interests ... but those of your customers as well.

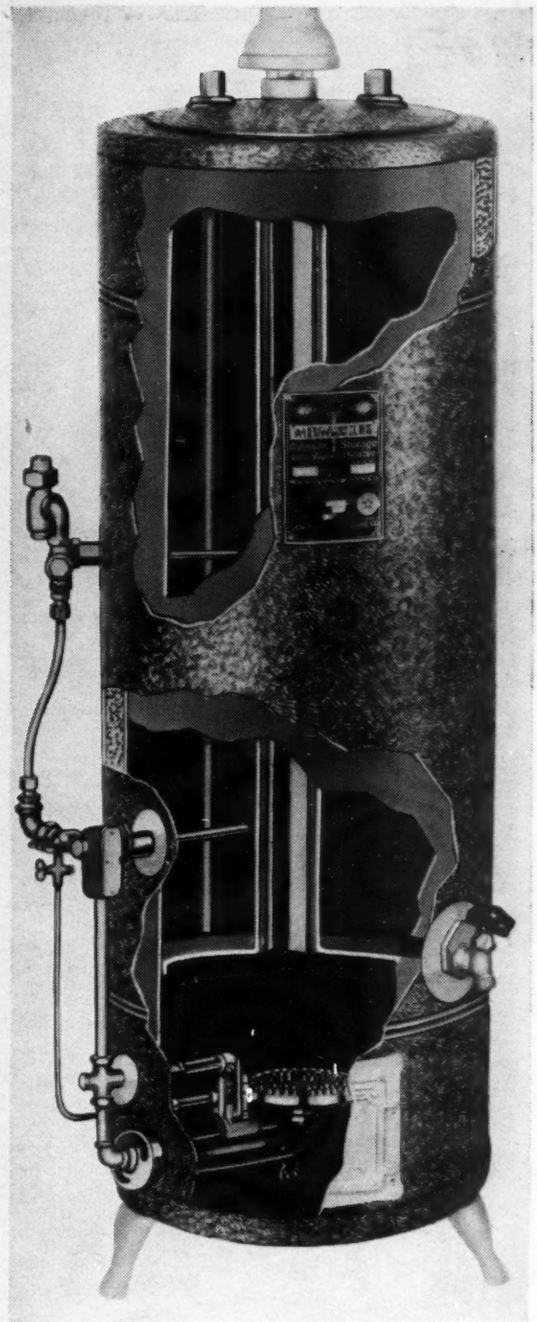
For to home owners, tanks of strong, rustless Everdur mean long, trouble-free service without periodic expenditures for repairs due to rust. Beyond that, Everdur Tanks offer the comfort and convenience of clean, *rust-free* hot water always. Such a combination of lengthy service and dependable performance cannot be found in a tank of rustable material.

Because they require far less servicing ... and because rust cannot interfere with steady gas consumption, tanks of Everdur best serve the interests of your company on a dollars and cents basis.

Everdur is copper ... scientifically alloyed with silicon to provide the strength and weldability of steel. Because of these properties, leading makers of automatic gas water heaters now standardize on tanks of Everdur for rust-proof models.

ANACONDA
from mine to consumer

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities



Cutaway view of Sands Automatic Gas Water Heater with welded Everdur Tank, made by The Sands Manufacturing Co., Cleveland, Ohio. Sands heaters are approved by the American Gas Association Testing Laboratory, and are offered with tanks of durable, *rustless* Everdur.

EVERDUR METAL
"Everdur" is a registered trade-mark, identifying products of The American Brass Company made from alloys of copper, silicon and other elements.

36122

EVERDUR METAL *for* TANKS

RUSTLESS AS COPPER ... STRONG AS STEEL

PACIFIC COAST GAS INDUSTRY STATISTICS FOR 1934 AND 1935

	1934	1935	% Change
Production—M c.f.			
Water Gas	2,254,846	2,388,859	
Coal Gas	517,692	576,403	
Oil Gas	3,427,137	3,830,689	
Coke Oven Gas	1,748,418	1,802,336	
Butane Gas	168,628	215,965	
Natural Gas Purchased	168,941,332	184,334,640	
Total	177,058,053	193,148,892	9.1% gain
Active Meters—Dec. 31			
Domestic	1,576,367	1,623,486	
Commercial and Industrial	78,803	84,304	
Total	1,655,170	1,707,790	3.2% gain
Sales—M c.f.			
Domestic	52,812,306	61,427,322	16.6% gain
Commercial and Industrial	72,096,879	86,695,662	20.3% gain
Electric Generation	27,880,887	18,346,201	34.2% loss
Total	152,790,072	166,469,185	8.9% gain
Gross Revenue			
Domestic	$51,405,936	$57,821,362	12.5% gain
Commercial and Industrial	17,122,734	20,860,062	21.8% gain
Electric Generation	3,456,448	2,329,075	32.7% loss
Total	$71,985,118	$81,010,499	12.5% gain
Miles of Main Dec. 31	26,277	26,522	
No. of Employees Dec. 31	10,707	11,603	
Annual Payroll	$16,950,330	$20,014,400	

Pacific Coast Industry Shows Marked Gain for 1935

THE above 1934-35 comparative table, which was released from Pacific Coast Gas Association headquarters last month, gives a picture of the industry's activities for the past two years. As of December 31, 1935, there were more customers on the lines of the Pacific Coast companies than at any other previous time. The table covers the states of California, Arizona, Nevada, Oregon and Washington and British Columbia.

The most noticeable gain in business in the Pacific Coast territory was recorded in the composite results for Arizona and Nevada (grouped for statistical purposes in the P.C.G.A. survey), which showed a gain of 92.6 per cent in M c.f. sales over 1934, due to the advent of natural gas in Arizona.

"Forced Air" Bulletin Brings Advertising News to Layman

THIS year's Advertising Committee of the Pacific Coast Gas Association's Sales and Advertising Section has undertaken to tell the rank and file of P.C.G.A. members something about how gas company advertising comes into being, and to solicit suggestions for making the industry's advertising more useful. As a step in this direction F. M. Raymond, chairman of the Advertising Committee, last month issued the first of several bulletins under the masthead "Forced Air."

F. M. RAYMOND

"Forced Air" is to be published periodically through this Association year, four issues being planned. Freshly gotten up by Rotoprint process, the bulletin is sure to get an attentive reading. The first issue goes through the steps of laying out a typical newspaper campaign, and for the layman reader's benefit defines several terms common in advertising patter. Every page carries a band of illustrations—some cartoons, some reproductions of member-company advertising copy.

Newspaper advertising is dealt with in the first issue; subsequent numbers will treat outdoor display, direct-by-mail, radio.

Koehn Leaves Geo. D. Roper Advertising Post

Geo. L. Koehn, formerly advertising manager of the Geo. D. Roper Corp., Rockford, Ill., has resigned to become account executive with Howard H. Monk Advertising, of Rockford.

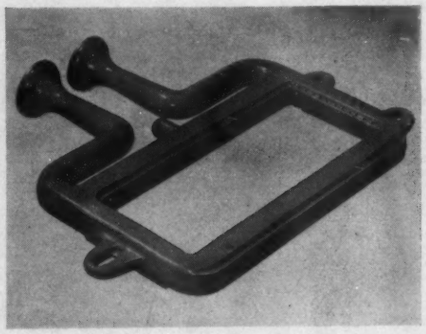
Mr. Koehn succeeds Robert E. Moore, who is planning a new eastern connection. The Roper advertising department will be divided into pump and stove divisions, headed respectively by C. E. Edwards and Elbert Hollingsworth.

Thomas Kennedy Passes Away

Thomas S. Kennedy, advertising manager of the Standard Gas Equipment Corp., passed away in the later part of February. Mr. Kennedy entered the advertising department of the William H. Crane Co. in 1912 and the advertising department of the Standard Gas Equipment Corp. in 1924 when the Crane company was merged with Standard.

New Low-Temperature Oven Burner Announced by Wedgewood

THE James Graham Manufacturing Co., makers of Wedgewood gas ranges, announces that its 1936 range models are equipped with new, slow, low-temperature



ovens. This new method of ovenizing is made possible by an automatic oven burner developed by Wedgewood engineers.

The new oven burner maintains even temperatures of from 60° to 80° lower than is possible with the old type oven burner. The burner consists of five rows of flame ports, and when the automatic control is set at "low," two of the rows shut off completely and the remaining flames are automatically reduced. The new burner also lights itself automatically.

As slow-ovenizing requires no searing, basting or oven preheating, roasts are placed into a cold oven and need not be inspected until the required cooking time has elapsed. Finer performance for delicate cake-baking is also claimed for the Wedgewood low-temperature ovens as is reduced meat shrinkage and cooler kitchen temperatures.

Taylor of Southern Natural Dies

C. B. Taylor, superintendent of the Southern Natural Gas Corp., at Atlanta, Ga., died February 11.

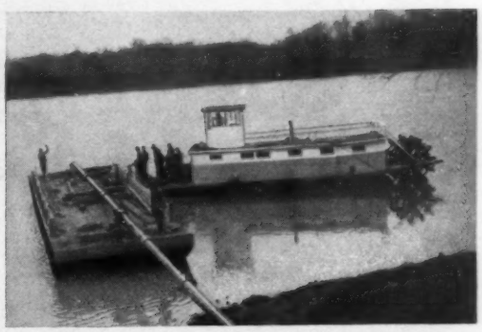
the proof of the pudding

FIVE YEARS' DEPENDABLE SERVICE IN PHILLIPS PETROLEUM COMPANY GASOLINE LINE

Engineers are finding from experience that it takes a better than ordinary pipe for lines that carry gasoline across the country—pipe that is free from inside scale—pipe that does not promote inside tubercular growths that inhibit flow—pipe that does not show corrosion after a short period of service.

The continued satisfactory operation of the Phillips Petroleum Company gasoline line from Borger, Texas to Kansas City and St. Louis, Missouri is proof that Republic Electric Weld Pipe is a better pipe—an ideal pipe for gasoline lines.

Features worth remembering—perfect roundness, uniform wall thickness and diameter, 100% weld, lengths up to 50 feet, freedom from scale, easy to weld, easy to bend, any desired yield point with high ductility. Write for more complete information.



REPUBLIC STEEL

Republic Steel CORPORATION

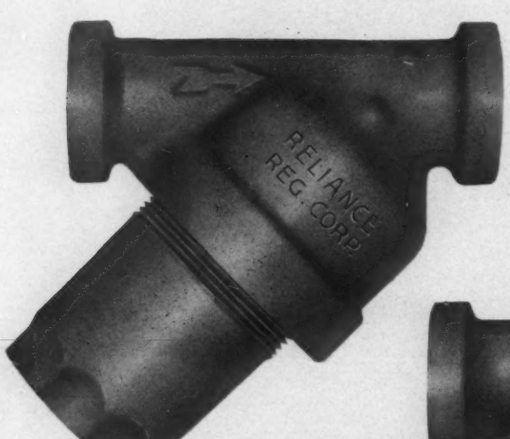
GENERAL OFFICES · · · CLEVELAND, OHIO

REPUBLIC ELECTRIC WELD

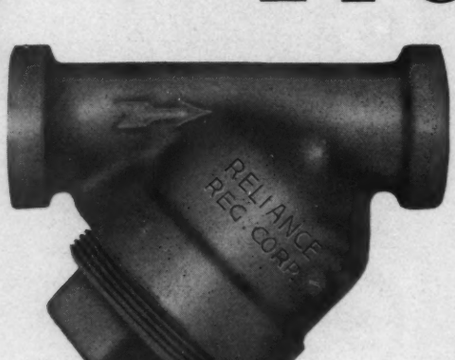
HIGH YIELD POINT WITH HIGH DUCTILITY

LINE PIPE

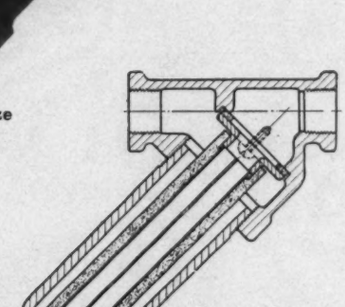
Stop Dust Troubles



Medium Size

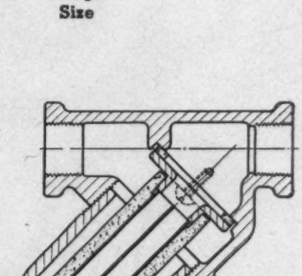


Small Size



Section
Large
Size

RELIANCE
TYPE "A" FILTERS



Section
Medium
Size

Here is effective and low cost protection for all service lines where dust is likely to interfere with the operation of meters, regulators, pilot lights, furnaces, water heaters and other appliances. Individual installations of Type "A" Dust Filters ahead of the meter will prevent the passage of dust and avoid unnecessary expense.

Reliance Type "A" Dust Filters are made in ¾" size with uniform body that takes either the small, medium or large filter element. Filter elements can be removed and replaced or changed without disconnecting the Filter body from the line. Connections are standard, with female threads at both ends, or gasketed unions at either or both ends. Filter elements have standard 2" pipe threads. Installations can be made vertically or horizontally with the dust chamber hanging downward.

These simple, rugged, low-priced Filters will give continuous efficient, care-free protection to all service lines in dust areas. Complete description in Bulletin No. 35, available on request.

REGULATORS YOU CAN RELY ON
RELIANCE
SINCE 1910

RELIANCE REGULATOR CORPORATION
1000 Meridian Avenue, Alhambra, California

RELIANCE REGULATORS

MEASUREMENT and CONTROL

The Intermediate Pressure Device

By GURNEY B. REECE
Southern Counties Gas Company
Los Angeles, California*

THE adoption of new orifice meter measurement standards brought to the foreground some factors which had hitherto been but superficially considered. The application of these factors more or less disrupted our computation routine and required that more time be devoted to this work.

GURNEY B. REECE

The inventiveness of some of those interested was challenged by this additional work. They sought to shorten or perhaps even obviate the necessity of this increase in computation complexity.

Among the ideas evolved was the intermediate pressure device. This device eliminates the use of the expasion factor (known as Fe_2 to those familiar with the California Natural Gasoline Association Bulletin T.S. 353) by adding to the downstream pressure that percentage of the differential necessary to give a resultant expansion factor of 1.000.

On Page 33 of the aforementioned C.N.G.A. Bulletin in Fig. 3 are shown two curves relating to intermediate pressure devices. The curve gives the percentage of the differential necessary at any particular ratio of orifice-to-pipe diameters, which must be added to the downstream pressure to give a resultant expansion factor of 1.000. The z/1-z curve gives the percentage relationship between the portion of the differential added to the downstream pressure and the remainder of the total differential or (as mentioned in the Bulletin) the length of the downstream tubing in an intermediate pressure device as a percentage of the length of the upstream tubing. In the tests made on the various devices these curves were used, as much as possible, as a basis of computation. These particular curves apply only to the use of the device on meters having flange connections. It is noted from these curves that the per cent of the differential between .15 and .70 orifice-to-pipe diameter ratio that is to be subdivided by the intermediate pressure device and allocated either to the upstream or downstream pressure, is only about 12.5 per cent of the total differential. This division of the differential is the function of the intermediate pressure device. Therefore tests as to the accuracy of this division are of interest.

Three devices for obtaining the correct intermediate pressure were tested. They were:

A. Cotigas intermediate pressure connection.

B. Metric intermediate pressure connection.

C. Clark variable intermediate pressure connection.

The Cotigas Type (Fig. 1-A) was most extensively tested and, briefly, is a long, small bore, copper tube having connections at the ends for the up and downstream pressures and three intermediate connections at intervals determined by equation 3, page 33 of Bulletin T.S. 353. The tubing is coiled for compactness and placed in a frame (see Fig. 1). The tubing used in this particular device was No. 77 copper tubing (.018 I.D.) and 50 inches in total length. No filters were used when making the test, but in practice it is planned to use felt filters in each end of the device.

The Metric Connection (Fig. 1-B) uses short, small bore .037-inch I.D. brass tubes, 4 inches and shorter, to conduct the pressure from each end to the chamber from which the intermediate pressure is taken. The variation in intermediate pressure is obtained by changing the length of the brass tubing in one end. There are horse hair filters in each end connection. The device was primarily made to give mean pressures.

*Presented at Spring Technical Conference, Pacific Coast Gas Association, Los Angeles, March 26, 1936.

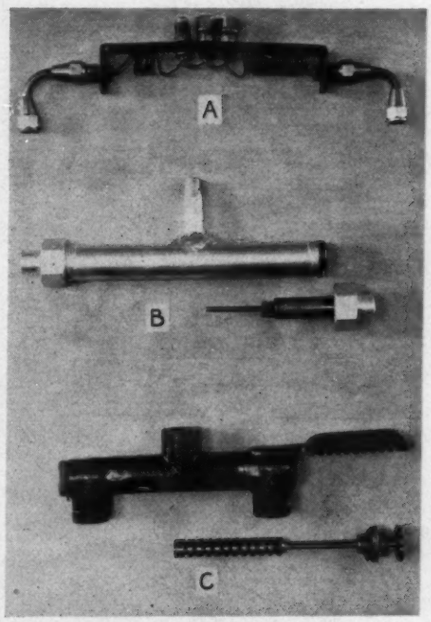


FIG. 1.

The Clark Connection (Fig. 1-C) consists of a machined cylinder, with a pressure connection at each end and at the middle, and a long piston fitted with ⅛-inch discs having a .002-inch clearance inside the cylinder and spaced ⅛ inch apart. With a rod through a packing gland and connected to the piston the latter can be moved to any of 10 positions, thus moving the resistance to either side of the intermediate pressure outlet. The position of the wheel, on the outside end of the rod, in the notched guide gives the relative position of the piston.

The test set-up is shown in Fig. 2 (Page 58). Pressure was controlled by the regulator at the lower left. The velocity was controlled by the valve at the lower right. The manometer at the left gave the differential between the upstream and intermediate pressures. The manometer on the right gave the differential between the intermediate and downstream pressures. The 5-ft. meter recorded the amount of gas by-passed through the device.

RESULTS OF TESTS

I. *Accuracy in Securing Desired Intermediate Pressure.*

A. The Cotigas device gives three intermediate pressures. In its construction, by the use of the various lengths of tubing (ascertained by use of curve in Fig. 3, page 33) it was attempted to add 36, 30 and 24 per cent of the total differential to the pressure. The results were as follows:

With 40-inch Differential 7-pound gauge: 36.8, 31.2, 25.4 per cent.

Tests were made at different pressures with no material changes in percentages. Tests at various differentials resulted in slight changes in the percentages. The greatest variation was 1.3 per cent of the total from the expected percentage.

Water was introduced at two of the positions and no change in percentages was noted.

B. The Metric connection uses a 4-inch brass tube on the upstream side, the downstream side being changed to meet the needs. Difficulty was encountered in getting the expected percentages of the differential. The variation of a fraction of an inch in cutting the tube would give surprising variations in the result. In attempts to get different percentages the results were:

Attempting	50%, result	53.4%
Attempting	50%, result	55.0%
Attempting	50%, result	46.6%
Attempting	50%, result	44.0%
Attempting	34.3%, result	38.2%
Attempting	34.3%, result	34.8%
Attempting	34.3%, result	37.2%
Attempting	34.3%, result	35.4%

However, the percentages changed but

(Continued on Page 58)

New Coefficients Feature S.C.M.A.-P.C.G.A. Meeting

MEMBERS of the Southern California Meter Association and visiting Pacific Coast Gas Association members held a joint session at a dinner meeting in Los Angeles, March 26. The session was arranged by the S. C. M. A. during dates of the Spring Conference of the P.C.G.A. Technical Conference, reported on another page of this issue, and was held in Los Angeles Gas and Electric Corp.'s cafeteria.

"Usage of the New Orifice Coefficients" was the discussion topic, with particular reference to Northern California practice. Among the visitors were P. E. Beckman, Pacific Gas and Electric Co., chairman of the P.C.G.A. Technical Section; E. H. Fisher, Coast Industrial Gas Co., chairman of the gas association's sub-committee on gas measurment; and L. F. Reetz, gas measurement engineer for the P. G. and E. Introduced by Mr. Beckman, the latter two men contributed a discussion of experience with the new measurement procedure in their respective companies.

An extremely entertaining narration entitled "The Last of the Long Hunters," wound up the meeting. This feature was given by R. D. White, superintendent of the Glendale, Calif., board of education, and consisted of a dramatic story around the character of Alvin York, the Tennessee mountaineer World War hero.

President F. E. Bradley of the S.C.M.A., turned the gavel to vice-president Guy Corfield for conduct of the orifice coefficient discussion. A summary of Mr. Reetz's and Mr. Fisher's comments, prepared for *Western Gas* by B. G. Williams, follows:

Both speakers dealt with how the Reynolds number, expansion factor and superexpansibility factors are used—whether they are computed separately for each day, or computed when the coefficients are changed, or whether an arbitrary figure is accepted for the Reynolds number and expansion factor for each meter.

Meters are divided into three classes: Purchase or production meters, transmission meters and sales meters.

Purchase or Production Meters: These meters operate under favorable conditions. The pressures are high and the rate of flow is reasonably steady, both of which factors make it easy to calculate the charts. In many cases the volume is computed directly on the chart without using the usual computation sheet.

The Reynolds numbers and expansion factors for these meters involve very small corrections, but are being applied. Using both of these factors is at least evidence of a desire to get maximum accuracy of the measurement.

On this class of meters the Reynolds number and expansion factors are computed each time the coefficients are changed. Their values are based on the average of the past operation. The superexpansibility factor is usually applied daily.

Transmission Meters and Sales Meters: These meters operate at very irregular flows and also are subject to frequently changing pressures. Both of these conditions cause difficulty in measurement and also in the application of the correct Reynolds number and expansion factor. These two factors are based on the data provided since the last change of coefficients.

On some meters, however, conditions are so irregular as to require the application of all three factors daily. An alignment chart was described by Mr. Fisher from which the values of h/P may be readily obtained when the values of h_s/P_s are known. By using this chart a more rapid calculation of coefficients is possible.

Accessory connections for an equalizing pressure device were also described, which provided a valve for checking the accuracy of the pressure equalized without shutting off the meter. The pressure equalizer when installed on the gauge lines near the meter, does not create a readable change in the differential pressure of the meter. The volume of gas that is by-passed on account of the equalizer is small.

Will Reduce 100 Pounds to a Medium or Low Distribution Pressure

TOGGLED REDUCING REGULATOR

In a tank or tranmission line carrying either natural or artifical gas, pressures may reach 100 pounds or more and the Fulton Toggled Reducing Regulator will hold delivery pressure constant at exactly the point required. Equipment of the regulator differs slightly according to the gas used. Constructed with oversize valves for industrial furnace installations. It is also adaptable for control of by-product coke-oven gas. Ask for Bulletin 2573—also catalog of Chaplin-Fulton Regulators, known as the best for 50 years.

THE CHAPLIN-FULTON MFG. COMPANY

28-40 Penn Avenue **Pittsburgh, Pa.**

REPRESENTATIVES

WESTCOTT & GREIS, Inc.
Sales and Service
Dallas — Tulsa

JNO. W. CRAWFORD
Sales Engineer
1855 Industrial Street, Los Angeles

PARSONS ENGINEERING CO.
Los Angeles, Calif. San Francisco, Calif.

OR ANY JOBBER

F. A. Wegener Elected Vice-President Welsbach Co.

AT a meeting of the board of directors of Welsbach Co., held on March 23, F. A. Wegener was elected vice-president of the company.

F. A. WEGENER

Mr. Wegener was graduated by Columbia University in 1912 as a mechanical engineer. Shortly after graduation he became associated with the Welsbach Co. and has served as assistant master mechanic, works engineer, chief engineer and general manager. In July 1934 he was elected to the board of directors.

Mr. Wegener has been responsible for the design and development of many gas appliances and devices produced by the company.

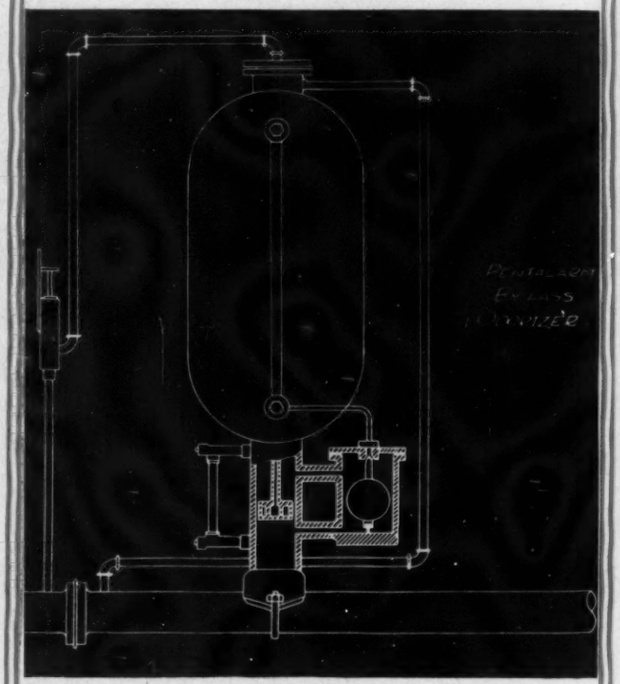
San Francisco Designated for P. C. G. A. Convention

The Pacific Coast Gas Association will hold its 43rd annual convention in San Francisco early in September, it was announced after a meeting of the Association's board in Los Angeles on March 20. Definite dates for the convention have not yet been announced nor have hotel headquarters been designated.

Wood Appointed Asst. Gen. Mgr.

Walter A. Wood, manager at Cynthiana, Ky., for the Central Kentucky Natural Gas Co., has been appointed assistant general manager at the company's headquarters in Lexington. Mr. Wood has been manager at Cynthiana since 1928.

SHARPLES PENTALARM ODORIZING UNIT



SHARPLES engineers have designed an odorizing unit that is not only simple in construction but easy to adjust, regulate and operate.

This unit is free from all complicated gadgets. There are no small orifice plates—no needle valves to clog, stick or adjust. • A small amount of gas is by-passed and saturated with **PENTALARM** (the warning odor for fuel gases) and returned to the main gas stream. This method assures safe, positive and continuous **PENTALARM** odorization.

•

Detailed facts sent upon request.

•

THE SHARPLES SOLVENTS CORP.
2332 WESTMORELAND STREET
PHILADELPHIA, PENNA.

Found!

A gas leak that was "found" at just the right moment. If undiscovered it might have proven dangerous and expensive. PENTALARM by its distinctive and far-reaching odor makes detectable the very first sign of escaping gas. Mixed in small amounts with the gas flowing through pipe-lines and mains, PENTALARM releases its powerful penetrating odor instantly at the point of danger. Repairs can then be made accurately and without delay.

•

Interesting and important facts and figures sent upon request.

•

THE SHARPLES SOLVENTS CORP.
2332 WESTMORELAND STREET
PHILADELPHIA, PENNA.

•

Pentalarm your pipe lines!

BUTANE-PROPANE NEWS

Pleasure Car Trailers, Market for Bottled Gas

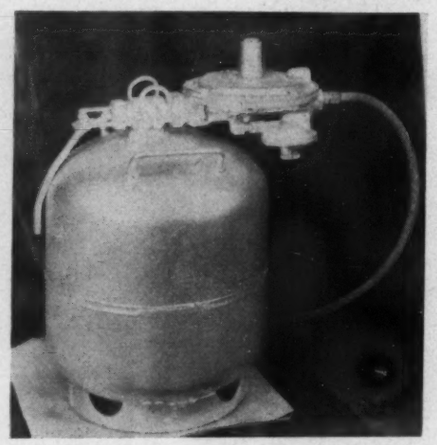
THE Imperial Gas Co., bottled gas distributor headquartering in Los Angeles, is pioneering the development of the pleasure car trailer industry as a market for bottled gas for cooking, water heating, and other domestic uses. While the unit consumption runs very low, the company feels that the publicity resulting from the use of the fuel in trailers will be another means of popularizing bottled gas as a fuel for domestic utilization.

Last year Imperial Gas Co. sold equipment for some 150 trailer installations. There are approximately 75 trailer manufacturers located in Southern California alone, and it is estimated that somewhere in the neighborhood of 17,000 trailers designed as portable living quarters are now in operation throughout the United States.

To provide bottled gas refueling facilities for this rolling equipment, the company to date has arranged for maintaining 26 point of supply scattered from California and British Columbia to New Jersey. Some of the refueling depots are the company's own distribution points while others are maintained through arrangement with other bottled gas distributors. Refills at the depots are charged at prevailing f.o.b. top prices.

For the trailer installations the company has developed a 20-pound capacity tank that measures 11½ inches in diameter and 17 inches in height (I. C. C.-4B-240) and weighs 41 pounds.

Imperial Gas Co. recommends that the fuel tanks be installed inside the trailer in an enclosed compartment to which access can be had only through a door from the outside



Imperial Gas Co.'s small cylinders for use of trailers and other domestic consumers.

provided for that particular purpose. The company further recommends that the door be vented at the bottom and that the regulator for reducing the tank pressure to a low delivery pressure to the appliances also be located within the tank compartment so that all connections inside the living quarters carry only low pressure.

This tank together with copper tubing connections, regulator and a charge of gas, is sold for $16.75 retail. They are sold outright to the trailer operator, to be recharged as needed.

The 20-pound charge burns about 100 hours, which is enough to last the average user from 30 to 45 days for cooking use.

Rates Cut on Water Heating and Refrigeration

A RATE reduction on bottled gas, applicable to commercial loads and to domestic usage on automatic water heaters and refrigerators, was scheduled to be put into effect on April 1 by the Philgas Department of Phillips Petroleum Co. The new rate setup should serve to increase gas load in these classifications and also to act as a weapon against electric competition. No reduction has been made in the price scale for gas used in cooking.

On domestic installations where an automatic water heater or refrigerator is installed, a meter will be placed on the line supplying these appliances, thus recording their usage separately from gas consumed in cooking. The new rate for such application will mean a reduction of more than 50 per cent.

Bills will be computed in decitherms. (A decitherm is equivalent to 10,000 B.t.u.'s, or .465 pound of bottled gas). The customer will be billed monthly at 2.2c per decitherm, with 10 per cent discount if payment is made within ten days. There is no minimum monthly usage which applies to this particular service, but the customer agrees to pay a minimum of $12 each calendar year for gas consumed in automatic water heating or refrigeration, or to make up the deficiency by cash payment when billed by the company.

Commercial loads will be computed on the decitherm basis also, with the difference that the lowered rate will apply to the consumer's entire usage and will be figured on a sliding scale as follows:

For first 100 decitherms per month.....$5.50
Next 100 decitherms..... .050 per decitherm
All over 200 decitherms.... .022 per decitherm

A 10 per cent discount is allowed for payment within ten days on this schedule also.

It is believed by Philgas officials that the new rates will lead to the installation of many new automatic water heaters and refrigerators by domestic users, with a large resultant increase in gas load. It is also expected that the lowered price will enable commercial and industrial users to find many new applications for bottled gas.

A.G.A. Laboratories Developing Standards for Propane-Fueled Ranges

THROUGH the National Bottled Gas Association and the Compressed Gas Manufacturers Association, the liquefied petroleum gas industry last fall agreed to recognize the American Gas Association Testing Laboratories as an official testing agency for liquefied gas appliances, and formed a Joint Committee on Propane Appliance Requirements to work with the Testing Laboratories. Following meetings with representatives of this group the A.G.A. gas range sub-committee has taken under consideration the following changes in gas range approval standards for propane-fueled ranges:

Increasing required top burner thermal efficiencies from 45 to 50 per cent.

Removing the 8,000 B.t.u. per hour per cu. ft. of oven space lower limit on oven inputs and specifying an oven preheating input and maintaining rate test.

Specifying pilot inputs adjustable down to at least 250 B.t.u. per hour.

Providing that automatic devices designed to prevent escape of unburned gas shut off gas supplies to sub-burners and pilot burners as well as main burners when called upon to operate.

Demanding valve lubricants commercially suitable for use with propane and butane-air gases.

Requiring fixed orifices only on main burners.

And insuring more direct and positive ignition of gas by both manual and automatic lighters for top, oven, and broiler burners.

Philgas Has Large Business Increase

New domestic installations for liquefied petroleum gas made during 1935 by the Philgas Department of Phillips Petroleum Co. increased 89 per cent over new installations in 1934. The volume of liquefied gases sold by tank car direct to large industrials for heat treating operations increased 57 per cent over the previous year. The large increase in domestic installations is attributable in part to a reduction of the installation charge made by the company in March, 1935.

Parr Transferred to Roseburg, Ore.

Al D. Parr, formerly manager at Ashland, Ore., for the Southern Oregon Gas Corp., has been transferred to act in the same capacity at Roseburg, according to word received from D. E. York, vice-president and general manager. I. F. Andres, formerly Medford manager for Montgomery Ward & Co., replaces Mr. Parr at Ashland.

Tank Truck Delivery for Maryland

Eastern Shore Gas Co., distributors of bottled gas on the eastern shore of Maryland and vicinity, with headquarters at Pocomoke City, Md., are preparing to begin monthly delivery service to customers by tank truck. They have previously used a monthly service plan which involved cylinder replacement.

New Distributor in New York-Pennsylvania Territory

ATLANTIC States Gas Co., Inc., 50 Broadway, New York City, is a new bottled gas organization which is going into the distribution business in Pennsylvania and northern New York. A bulk station is nearly complete at Lancaster, Pa., and is expected to be in operation some time in April. Another bulk station is planned for Lewistown, Pa., and a third will probably be located at Cortland, N. Y., or Norwich, N. Y.

This concern, which was incorporated February 4, is well financed and is under the management of men experienced in the utility field. John J. Klise, at one time president of Texas Gas Utilities and now connected with several utility companies, is president. Other officers are: Frank R. Hurlbutt, vice-president and secretary, and Arthur V. Nelmes, vice-president and treasurer.

Directors are as follows: Col. George A. Burrell, Edwin L. Coyle, Frank R. Hurlbutt, John J. Klise, and Arthur B. Koontz. Active in the operation of the company is B. B. Stroud, formerly with Vapyre Corp., Pleasantville, N. Y.

Underground tanks of 175-gallon capacity will be installed, and the gas will be a mixture of approximately 65 per cent butane and 35 per cent propane. Price to the customer has not yet been announced, but it is expected to be at a rate which would be equivalent to about 80c per M c.f. of 524 B.t.u. gas.

Ensign Enlarges Chicago Warehouse Facilities at New Location

Removal of its Chicago headquarters to larger space in that city is announced by Ensign Carburetor Co. of Los Angeles. Greatly increased warehouse facilities have been provided at the new location, 2644 South Michigan Ave., where large stocks of all types of Ensign carburetors and parts will be maintained, making possible same day, or overnight deliveries to practically all eastern points.

The Ensign Carburetor Co. manufactures a complete line of gas, gasoline, combination gas and gasoline carburetors, gas fuel regulators, and butane-propane equipment, in both up and down-draft design, for heavy duty automotive service and for all types of multiple cylinder stationary engines in agricultural, industrial, oil and gas and in marine service. In addition the company manufacturers four sizes of up-draft heavy fuel carburetors.

Dept. of Agriculture Bottled Gas Bulletin

The work which the U. S. Department of Agriculture has been doing in conjunction with the National Bottled Gas Association on the preparation of a bulletin dealing with bottled gas for domestic purposes, has been delayed, due to the necessity of re-running tests on appliance efficiencies. This part of the work, however, has now been completed, and the Bureau of Home Economics at Washington, under the direction of Dr. Louise Stanley, is at present running cooking tests. These will form the basis of the pamphlet to be issued, and as soon as they have been finished, the pamphlet can be scheduled for early publication.

UNIFORMITY that means EFFICIENCY

It is only the first step to design and build Hackney liquefied petroleum gas cylinders to be highly efficient containers for Butane, Propane and Butane-Propane mixtures.
The next step is to build hundreds of thousands of cylinders with unvarying adherence to quality standards. Workmanship . . . calibration capacity . . . threading . . . insertion of valves . . . as well as careful supervision of raw materials . . . must be controlled.
This uniformity that means efficiency has won Hackney cylinders two to one preference in the field. Such leaders as: Shell, Standard, Phillips, Hope, Skelly, etc., are users of Hackney cylinders in the liquefied petroleum gas field.

Hackney MILWAUKEE

PRESSED STEEL TANK COMPANY

1185-208 S. La Salle St., Chicago, Ill.; 6633 Greenfield Ave., Milwaukee, Wis.
666 Roosevelt Bldg., Los Angeles; 1363 Vanderbilt Concourse, New York

Containers for Gases, Liquids and Solids

Gas Hair Dryer Requirements Ready for Approval

AS the result of meetings held at the A. G. A. Testing Laboratories in both Cleveland and Los Angeles in the latter part of January to discuss requirement standards for gas hair dryers, a set of standards will be submitted to the Approval Requirements Committee in April. Essentially the tentative approval requirements for gas hair dryers which were distributed for criticism last November were found satisfactory. Among the few changes made, however, were an amendment specifying automatic shut-off in the event of fan stoppage, an additional performance test, revision of the fire hazard test to cover operation with fan stopped and a number of changes involving manifold pipe size, and manner of application of room draft test. Requirements provide for thermostatic control on all hair dryers, whether multiple or single helmet.

N. J. Reiff, of the United Gas Improvement Co., Philadelphia, is chairman of the hair dryer sub-committee. If the standards are approved at the spring meeting of the Approval Requirements Committee, they will become effective January 1, 1937.

Elsinore Gets New Office

Southern California Gas Co., with headquarters in Los Angeles, has constructed a new office building at Elsinore. Elsinore is in the company's eastern division and Miss Rose Ridley is in charge.

KEROTEST
tested and proved
FORGED BRASS
CYLINDER VALVES
and S. A. E.
FLARE FITTINGS
for
PROPANE
BOTTLED GAS
SERVICE

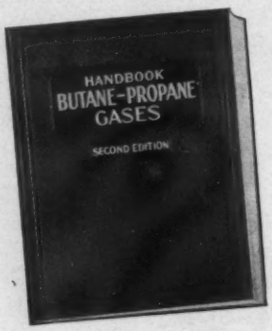
Write for descriptive circular
KEROTEST MFG. CO.
PITTSBURGH, PA.

KEROTEST

REDUCE
Operating Cost
— WITH —
SPRAGUE
METERS
— AND —
SPRAGUE
REGULATORS

SPRAGUE METER
COMPANY
Bridgeport, Conn.
Los Angeles-San Francisco, Cal.

THE ONLY
HANDBOOK OF
BUTANE-
PROPANE
GASES



Big Second Edition
Now Available

CONTENTS: Summary of Two Years' Developments: Use in Internal Combustion Engines: Design and Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economic Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Supplements and Revisions: Transportation: Use with Other Gases: Analysis and Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalogue Section:

$5.00—Send Check or Money Order To

WESTERN GAS, *Publishers*
809 South Main St.
Los Angeles, California

Write for circular describing contents in detail.

Illinois Bottled Gas Co. to Build Bulk Station and Warehouse

The Illinois Bottled Gas Co., distributing bottled gas throughout the Middlewest will commence construction of a combination bulk station and warehouse about June 1 on property bought for the purpose at the southeast corner of South Park Ave. and West 66th Place in the Clearing Industrial district of Chicago.

The plant, which will be constructed at an approximate cost of $35,000, will serve both as a bulk station and a warehouse for cylinders and appliances. The sales office of the company will continue to be maintained in downtown Chicago, according to B. D. Geroy, treasurer and general manager. Construction is expected to be completed November 1.

Contracts Awarded for Mt. Vernon Butane-Air System

The C. I. Tenney Engineering Co. of Minneapolis, Minn., has been awarded the contract to construct the distribution system for the butane-air plant to be erected in Mt. Vernon, Ind., according to D. T. Blakey, consulting engineer for the project. J. Trockman & Son of Evansville, Ind., has been awarded the contract for generating equipment, while the building for housing the plant will be constructed by Lester Wells, building constructor of Mt. Vernon. Construction will be commenced about April 1, according to Mr. Blakey, and the plant is expected to be completed within a 90-day period after construction is commenced.

Utilities Distributors, Inc., Completing Maine Bulk Station

Utilities Distributors, Inc., bottled gas distributors in northeastern United States, are completing a bulk station, with 15,000-gallon capacity, at Portland, Me. The company's dealers have previously had their cylinders filled at Philgas bulk stations.

As soon as work on the new plant is completed, the firm's headquarters will be moved to Portland from Bangor, Me. A convention of the dealers is scheduled to be held in Portland on or about April 15.

New District Offices for Los Angeles Gas and Electric Corp.

Los Angeles Gas and Electric Corp. will begin construction within 60 days of a new office building on property recently purchased for the purpose in Hollywood on Ivar Street just off Hollywood Boulevard. The new building will have a modern front 60 feet wide with full plate glass windows and will extend to a depth of 150 feet.

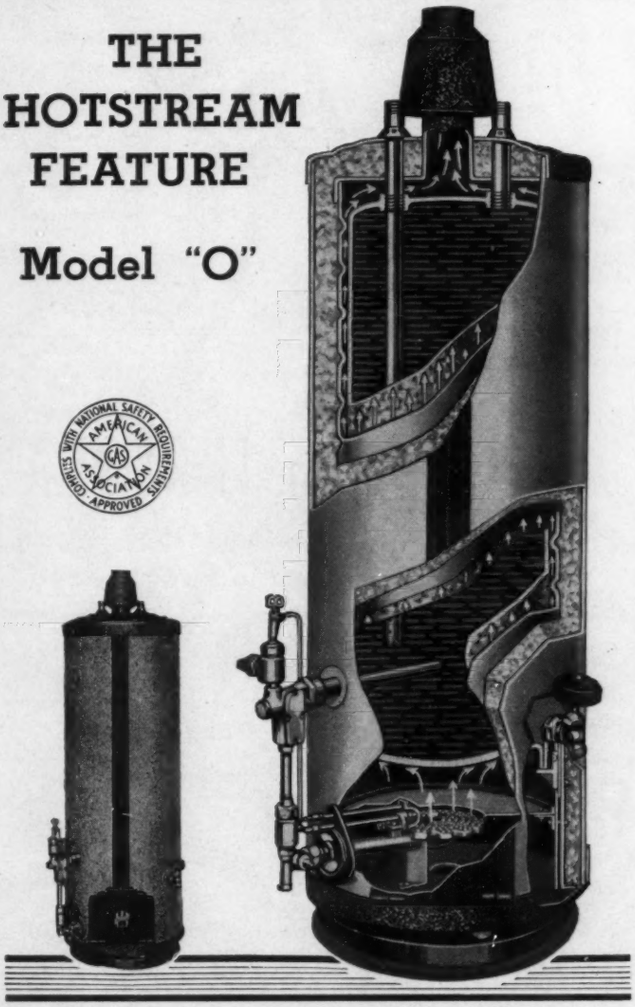
At 4065 West Pico Boulevard, Los Angeles, the company is remodeling a building which it has leased for another new office. This office will have a modern kitchen and is being remodeled with a view to improved display space facilities. It will be opened early in April.

Philgas Acquires Conn. Bottled Gas Co.

Connecticut Bottled Gas Co., Danbury, Conn., was purchased recently by the Philgas Department of Phillips Petroleum Co. Sam Altschuler, who was sole owner of the company, has accepted a position with Philgas in a sales capacity in the territory around Danbury which his firm formerly covered.

THE HOTSTREAM FEATURE

Model "O"



This Four Star Feature is a Hotstream Scoop—

★ Higher Efficiency

★ Rapid Recovery

★ Modernistic Style

★ Customer Appeal

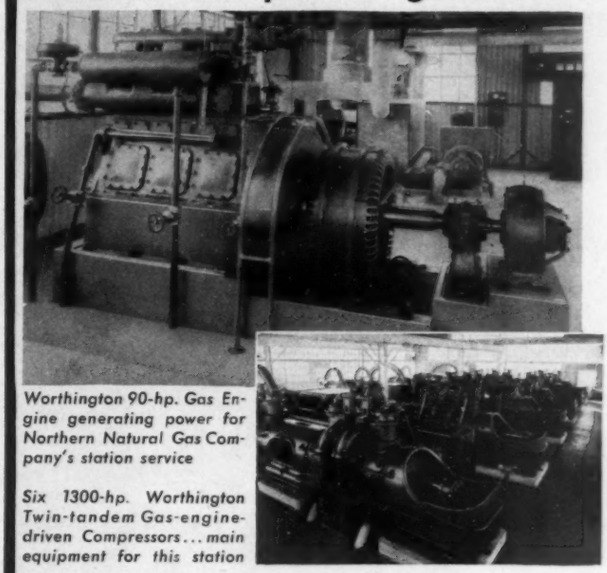
Here's a "rapid recovery" heater that has proved itself "best by test." Competitive tests by gas company engineers proved the Model "O" to be superior. As a result, successful merchandising campaigns have been built around it. Made in 20, 30 and 40 gallon sizes —approved by A. G. A.

Make it easier for your salesmen to win prizes in the contest. Give them the Hotstream Feature—model "O" to sell.

THE HOTSTREAM HEATER CO.
"Makers of Heaters that Heat" CLEVELAND, OHIO

For low cost power from gas . . .

WORTHINGTON VERTICAL GAS ENGINES *meet every demand for economical power generation*



Worthington 90-hp. Gas Engine generating power for Northern Natural Gas Company's station service

Six 1300-hp. Worthington Twin-tandem Gas-engine-driven Compressors . . . main equipment for this station

AT the Northern Natural Gas Company's Palmyra pipe line station, where six Worthington 1300-hp. Gas Compressors are on transportation, this compact Worthington 90-hp. Gas Engine is operating in general station service.

It is but one of numerous examples of Worthington installations which are demonstrating their many advantages to power users in a wide range of applications in the constantly expanding areas where gas fuel is available.

GAS ENGINES	DIESEL ENGINES
30 to 1800 hp.	25 to 1500 hp.

● ***TO POWER USERS IN EVERY INDUSTRY . . .***

Worthington offers the services of an organization unsurpassed in its ability to analyze correctly any power problem . . . with more than 35 years of successful engine building and application experience to support its recommendations.

Literature on request

WORTHINGTON PUMP AND MACHINERY CORPORATION
General Offices: HARRISON, NEW JERSEY
A-36265 *Offices and Representatives in Principal Cities*

WORTHINGTON

COMMITTEE
A. C. Joy, (P. G. & E.)
Chairman
J. S. Spaulding
(L. A. G. & E.)
Forrest Raymond
(San Diego Cons. G. & E. Co.)

Load Building News
P. C. Gas G. A.
THE MODERN FUEL

COMMITTEE
Douglas Buckler
(So. Calif. Gas Co.)
W. D. Thurber
(So. Counties Gas Co.)
Clifford Johnstone
Managing Director
(P. C. G. A.)

Volume 8, No. 4 *Eighth consecutive year of regional cooperative advertising, Pacific Coast Gas Association* April, 1936

COOPERATIVE ADVERTISING EMBLEM WIDELY USED IN GAS INDUSTRY

Committee Invites General Adoption for Added Memory Value in Publicizing Gas

Adopted nearly a decade ago as a distinctive mark for P. C. G. A. cooperative advertising, the script-style design, *"GAS, The Modern Fuel"* has achieved wide popularity throughout the Industry.

Among many advertisers recently noted who use the word "Gas" in this distinctive script, are: Electrogas Furnace and Manufacturing Co., San Francisco (on store-displays); Gas Appliance Society of Northern California; Southern Oregon Gas Corporation; Electrolux; Cribben & Sexton, Chicago, (Universal Gas Ranges); Detroit, Michigan Stove Co., (Detroit Jewel and Garland); and Nashville Gas & Heating Co., of Tennessee. Newspapers, window displays, magazines and bill-boards throughout the nation are multiplying impressions of the word "GAS" by millions, in this same distinctive design, or close simulations of it.

This is highly desirable, in the opinion of many sales and advertising executives. This "flowing" script lettering is peculiarly appropriate for Gas. Moreover, the *memory value* of the design is enhanced every time it is repeated, until it becomes an instantly recognized symbol for "the MODERN fuel" and modern gas appliances.

Flexible as gas fuel itself, this "logotype" is adaptable to many variations, suggested by those illustrated. Manufacturers, utilities and other advertisers of gas and gas appliances are invited to make even more extensive use of it. The Cooperative Advertising Committee has imposed no trade mark or copyright restrictions on the design.

April Cooperative Advertising Schedule Features Modern Gas Cookery

Again during April, Pacific Coast consumer magazines will carry a powerful, full-page advertisement on the modern gas range.

Over the Association signature, but referring readers to local appliance-dealers or gas companies, the April message dramatizes the speed and flexibility of gas: *"At the turn of your hand . . . a thousand instant heats."*

Western Gas readers may see this striking ad in the April issue of Sunset Magazine, available at news stands; or may obtain reprints from the P. C. G. A. office, 447 Sutter Street, San Francisco. The same ad will appear in parent-teacher and club women's magazines.

Trade Journal Subjects, April

Architects' and builders' publications—new gas-heated "Sunkist" Building, Los Angeles. *Restaurant and hotel magazines*—Willard's Los Angeles restaurants. *Western Baker*—gas baking testimonial by R. J. Duclos, Oakland, Calif. *Western Furniture Retailing*—successful appliance merchandising by Golden Rule Store, Burbank. *Western Plumbing & Heating Journal*—Purcell's (San Francisco) 31 years' of gas appliance selling.

Review of P. C. G. A. Spring Conferences

(Continued from Page 19)

on the subject "Nuisance or Menace—Which Are You?" first convulsed the audience with his experiences and comments on the World War, and then, in serious vein, brought out his subject, which had to do with the traffic accident and mortality situation facing the country today. Mr. Beckman then introduced A. B. Macbeth, president and general manager of the Southern California Gas Co., who commended the technical and engineering activities of the Association as an invaluable contribution to the progress of the industry.

Gas Utilization

Guy Corfield, Los Angeles Gas and Electric Corp., chairman of the Utilization Committee, introduced T. G. Wallace of the same corporation, who read a brief progress report on "Thermostats for Space Heaters." This was followed by discussion to the effect that it was not advisable to place thermostats on radiant-type heaters—or for that matter on any relatively low priced space heater; that all thermostatically equipped heaters should have pilot lights; that the public, becoming more and more "automatic" minded, may demand such thermostats.

Dr. F. E. Vandaveer, supervisor of the A. G. A. Testing Laboratories, Los Angeles, Calif., read a paper entitled "New Developments in Research on Domestic Gas Appliances," which will be dealt with in an early issue.

Gas Lighting

A very comprehensive program of investigation now being undertaken by his committee was outlined by C. A. Thorp, Los Angeles Gas and Electric Corp., chairman of the "Gas Lighting" sub-committee. Mr. Thorp then called upon W. G. Cox of the same corporation for a paper on "What Does Present Day Gas Lighting Have to Offer?"

As a part of the gas lighting sub-committee's presentation, C. B. Babcock, president of the C. B. Babcock Co., exhibited a series of still pictures on the screen, showing the installation of gas lighting made throughout the United States, as well as various types of lamps and standards now available, and working details of superchargers.

A street light and four indoor lights also were exhibited on the stage.

Training in Customers' Service

Lee Holtz, Southern California Gas Co., described how the outside divisions of his company are kept up to date on service methods and appliances. A head instructor, working out of the main distribution office in Los Angeles, is provided with portable demonstration equipment, which is used to instruct key men picked from the various divisions, at their division headquarters. This is economical of time, and sets up responsible and well trained men in the divisions. These division men not only act as instructors to their own group, but go out on the most difficult service calls.

Symposium

In this symposium, led by Mr. Corfield, the following subjects were discussed: Electrolux servicing; examination of apartment house space heaters—one company declining to service completely obsolete or inadequate equipment; visiting public school cooking schools to see that the gas range equipment is adequate and in good working order; servicing of apartment house water-heating equipment, because it provides a large proportion of the revenue from such customers; and, testing and calibration of gas range ovens. Under this last topic it was stated that the conventional oven thermometer is a slow and often inaccurate instrument, and that simple pyrometer equipment is much to be preferred.

A feature of the conference not covered above was the joint dinner and business meeting held Thursday evening, March 26, with the Southern California Meter Association. This meeting is reported on Page 44.

Calendar

April

New Jersey Gas Association—25th Annual meeting, Berkeley Carteret Hotel, Asbury Park, N. J., April 2.

American Gas Association — Distribution Conference, Hotel Peabody, Memphis, Tenn., April 6 and 7.

Mid-West Gas Association—31st Annual Convention, Minneapolis, Minn., April 13-15.

Missouri Association of Public Utilities—Annual Convention, Jefferson Hotel, St. Louis, Mo., April 29, 30 and May 1.

May

Pennsylvania Gas Association—Annual Meeting, Skytop Lodge, Skytop, N. J., May 5 to 7.

Natural Gas Department, American Gas Association—Annual Spring meeting, Hotel Baker and Hotel Adolphus, Dallas, Texas, May 5-8.

National Fire Protection Association—Atlantic City, N. J., May 11 to 14.

Indiana Gas Association—Annual Convention, Purdue University, West Lafayette, Ind., May 20 and 21.

Industrial Gas Section, American Gas Association—Commercial Gas and Hotel and Restaurant Sales Conference, The Mayflower, Washington, D. C., May 25 and 26.

American Gas Association—Production and Chemical Conference, New York, N. Y., May 25 to 27.

June

American Society of Mechanical Engineers—Dallas, Texas, June 17 to 20.

American Society for Testing Materials—Atlantic City, N. J., June 29 to July 3.

July

American Home Economics Association—Olympic Hotel, Seattle, Wash., July 6 to 9.

Canadian Gas Association—Annual meeting, and *Pacific Coast Gas Association*—Northwest Conference, Hotel Vancouver, Vancouver, B. C., July 8-10.

September

American Chemical Society — Annual meeting, Pittsburgh, Pa., September 7-12.

Third World Power Conference—Washington, D.C., September 7-12.

October

American Gas Association—18th Annual Convention, Atlantic City, N. J., week of October 26.

November

American Petroleum Institute—Annual Convention, Chicago, Ill., November 9-12.

Canar Discusses House Heating for Chicago Group

AT A MEETING of the Gas Engineering Section of the Western Society of Engineers held March 9 at the Society's headquarters, Alford G. Canar, space heating engineer of the Peoples Gas Light and Coke Co., gave a comprehensive paper on the subject of space and house heating. After presenting an analysis which indicated that the over all efficacy of house heating is dependent on a variety of factors among which are degree of completeness of combustion, absorption of heat by the boiler, and the transfer, delivery and distribution of the heat, Mr. Canar described the operation and installation features which have major effect on these factors.

Most heating installations are designed to produce enough heat to balance that lost from the space heated under a temperature differential of 70 degrees F. Structural insulation reduces the loss occuring at this differential and thereby reduces heating requirements. Firing is normally adjusted to yield definite rates of increase in temperature of the heat transferring fluid—one pound rise per minute of steam pressure, or one degree rise per minute of hot water temperature, at the boiler outlet. Therefore piping systems and radiation should be such as to most effectively transfer the heating fluid from boiler to the space heated and back again. Low intensity drafting and increased baffling are used to increase the proportion of heat absorbed by the boiler, burner adjustments being made primarily to insure complete combustion.

Various members of the audience of 120 informally discussed subjects allied to gas heating such as automatic draft controls and diverters, location of controls for automatic operation, prevention of chimney condensation, etc.

Hugh E. Ferguson, plant testing engineer of the Peoples Gas Light and Coke Co., is chairman of the section.

George P. Buck Passes Away

George P. Buck, a member of the board of directors of Western United Gas & Electric Co. of Aurora, Ill., passed away on February 24. In addition to holding a directorate in the company Mr. Buck was president of the Werden Buck Building Material Co. of Joliet and a director of the Joliet Chamber of Commerce.

Chain Store Tax and Appliance Sales

(Continued from Page 11)

the 20- to 35-store bracket for tax purposes.

Another hot spot of the anti-chain fight this year is California. Voters of that state will go to the polls in November to write Yea or Nay on the measure passed by the 1935 legislature, and promptly appealed to the people through referendum, which would require chain-store organizations to pay a graduated yearly license fee amounting to $500 for the tenth and each additional store in every multiple-unit group. In some respects this is the most onerous tax yet written into statute by the enemies of multiple-unit selling, and the clash between anti-chain and defensive forces in the intervening months before November promises to be the most bitter skirmish of the whole fight thus far.

The law which the California voters will approve or reject defines a "store" as follows:

". . . any store or stores or mercantile establishment or establishments, which are owned, operated, maintained, or controlled by the same person, in which goods, wares or merchandise of any kind are sold at retail."

This definition brings plainly within the scope of the proposed tax all "stores" operated by public utilities in which any product is sold, regardless of the volume of sale. In other words, a public utility branch office selling any appliances at retail, no matter how small a quantity, will be subject to the tax, which begins at $1 a year for the first store, doubling for each additional store, and applied uniformly at $500 a year on every store in excess of nine.

The 1933 census reported 161 utility-operated appliance stores in California, having total sales of only $2,574,000—or less than $16,000 a store. A tax of $500 a store on this average sales volume amounts to more than 3 per cent on the gross. But the independent stores in California in the household appliance group had sales of more than $18,000 a store—and they escape the tax.

As is well known by everyone familiar with appliance merchandising on the Pacific Coast, the relationship existing between independent dealers and the utility-operated stores is one of close cooperation. California's principal utilities have followed a policy of encouraging the dealer as a logical outlet for domestic appliances, and they have operated their own stores largely for the convenience and education of the public and as a means of pioneering for those appliances that require special promotion pressure. They have contributed to dealers' sales by their own advertising, by cooperative advertising, and by varied educational and promotion methods in which the utility has been the independent dealer's friend and sponsor.

As an example of the outworking of the policy in one California utility's territory, Pacific Gas and Electric Co. reported last year that for every dollar in appliance sales made by its own stores, the dealers in its markets have made $12.40 in sales.

This same cooperative activity is being carried on generally throughout the country, and may be accepted as fundamental in utility sales procedure.

Cooperative Policy Threatened

Now, the adoption of the chain-store tax threatens to reward this dealer policy by imposing a prohibitive levy on utility outlets—in addition to all the rest of the burdensome taxes under which the utilities are groaning. Important to the whole industry is the obvious fact that the utilities cannot afford to operate retail outlets as mere service and co-operative establishments if such a tax is put into effect. Many utility "stores" are maintained principally that the customer may see the latest appliances, and in order to spread the gospel of gas or electric conveniences. Such stores may have an annual sales volume so limited that the amount of the tax would be definitely prohibitive.

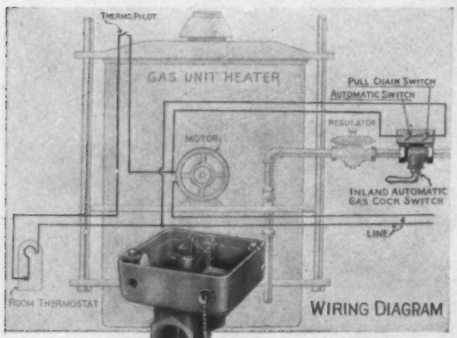
To date the following states have imposed chain-store taxes: Alabama, California, Colorado, Delaware, Florida, Idaho, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Montana, North Carolina, South Carolina, South Dakota, West Virginia, Wisconsin, and Texas. In several of these states the taxes have been attacked as discriminatory and unconstitutional and the validity of the legislation is yet to be established by the high courts. In Alabama the tax statute has been suspended pending referendum on November 3 of this year. In Louisiana and Texas litigation as to constitutionality is pending.

The enemies of multiple-unit distribution seem determined to carry the movement still further, and the interest of the gas and electric appliance industry in the outcome is indisputable. Because of the high proportion of its sales handled through other than independent channels it would have to bear much more than a pro-rata share of the tax in most states. Fifty-four and a half per cent of all household appliance stores in the United States would be subject to tax, under the terms of statutes drawn like California's disputed measure—compared for example with 3.2 per cent of all furniture stores, and 2.5 per cent of all radio stores.

Would Cost Industry Millions

The amount of such a tax, on a national basis, would be approximately $2,500,000 a year, amounting to nearly 2½ per cent on the total sales volume reported by all the chain and utility-operated appliance stores in 1933.

The table shown with this article, comparing household appliance sales in 1933 by stores of various types, reveals interesting facts about the chain-store and the utility-store in the appliance industry. States have been grouped by geographic divisions to facilitate comparisons.



★

INLAND
GAS SPECIALTIES

★

This Safe, Handy
GAS COCK SWITCH
SELLS UNIT HEATERS

★

Boost your unit heater sales with this combination gas stop cock and summer switch. Simple to operate, absolutely safe, and makes unit available for ventilation only, at any room temperature. When gas cock is turned off, pilot and thermostatic controls are automatically cut out and fan is then controlled with pull chain. When cock is opened, pilot and thermostatic controls are automatically brought into operation. Write today for new folder giving complete information and illustrating full line of Inland Gas Specialties.

INLAND MANUFACTURING COMPANY
(Dept. 2) 1120 NORTH CICERO AVE., CHICAGO, ILL.

SEASON of cleaning and renovating . . . season, also, of bright, new "model homes" with their supremely modern kitchens, laundries, baths. A good season, we think, to push that indispensable aid to cleanliness, the Automatic Storage-type Water Heater. And so we will. Fortified by our advertising, your own efforts along this line can hardly fail. Details of our spring Water Heater promotion will be found in the current Dealer Bulletin. Read—plan—then ACT!

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

Owned · Operated · Managed by Californians

WG 204-436

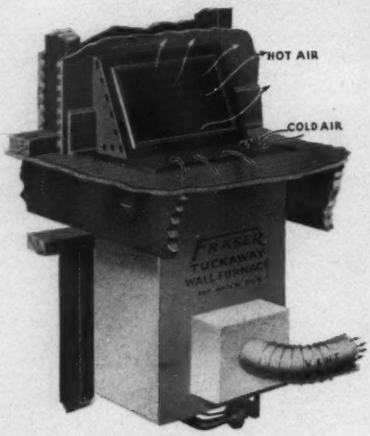
Profitable DITCHING

With Barber-Greenes

There are Four Barber-Greene Ditchers—
The Standard
The Pipeline Special
The Utility Special
The Service Special
You can have the many advantages of the exclusive B-G Vertical Boom in a machine designed for your peculiar needs. Ask for complete information, there is no obligation.

BARBER GREENE
715 West Park Ave.
Aurora, Ill.
36-17

FRASER
TUCK-A-WAY

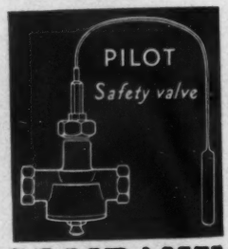


An entirely new idea in Furnace Construction
Made in 4 sizes
Manufactured by
Fraser Furnace Company
Stockton, Calif.
Distributed by
H. R. Basford Company
San Francisco Los Angeles

BUILD YOUR HOUSEHEATING LOAD WITH KLIXON CONTROLS

These two advanced Klixon devices give exact automatic temperature control and assure positive pilot protection for your gas-fired space heaters . . . provide sales features that make it easy to sell gas heating.

Write today for descriptive bulletins.



SPENCER THERMOSTAT COMPANY
Unit of Metals & Controls Corporation
34 FOREST STREET • ATTLEBORO, MASSACHUSETTS

U. S. SUPER de LAVAUD
CAST IRON PIPE
"Cast without chill in a metal mold"
U. S. PIPE AND FOUNDRY COMPANY
Burlington, N. J.

Plumber Cooperation

(Continued from Page 12)

ter heaters were substantially reduced, and at the same time terms of payment increased to a maximum of 60 months.

Under a rental-purchase agreement any residential customer of The Peoples Gas Light and Coke Co. may contract with the company or any authorized dealer for the installation of an automatic water heater by making a minimum payment of $1 and subsequent rental payments as low as 4c a day. The customer also has the privilege of paying up the contract in full at any time, and receives full credit for all rental payments and a discount of 10 per cent on the unpaid balance.

Under this new agreement any plumbing contractor acting as the agent of a manufacturer is permitted to take contracts of this kind, and in doing so receives a commission of 15 per cent for making the sale and, in addition, of course, is paid by the manufacturer for making the installation. Rental purchase agreements of this kind are assigned to the gas company by the manufacturer and subsequently billed by us, just as though we had made the original sale.

In addition to this rental-purchase agreement plan, it was agreed that the gas company would pay a bonus of 20 per cent to any plumbing contractor who sold an automatic water heater to a customer of the gas company for cash or on a short term contract that was not required to be financed by the gas company.

One important part of the agreement between the manufacturers, the contractors and ourselves provided, however, that in order to be considered eligible for either a commission or a bonus, all equipment must have been approved by the testing laboratory of the American Gas Association and carry its seal of approval. It is also understood that such equipment must be installed in accordance with the rules of the distribution department of the gas company and comply strictly with the provisions of the ordinances of the City of Chicago.

As previously stated, commissions and bonuses for installation on rental-purchase contracts are paid directly to the plumbing contractor by the manufacturer. Bonuses, however, for accounts not financed by the gas company are paid directly to the plumbing contractor by the gas company.

The plumbing contractor who sells and installs an automatic water heater notifies the gas company on a postal card prepared for this purose, and immediately on its receipt, an inspection order is issued to our distribution department. As soon as inspection has been completed and the installation approved, a voucher is drawn for payment of the bonus to the plumbing contractor.

During 1935 The Peoples Gas Light and Coke Co. carried on an aggressive advertising campaign. Part of this advertising consisted of a radio program of 13 weeks, six days a week, and this program, in conjunction with practically continuous advertising in community newspapers, continually brought the attention of our customers to the imperative need of automatic hot water service, and the attractive terms under which it could be purchased.

In all of this advertising, both radio and newspaper, we specifically directed the attention of the prospective customer to his local plumbing contractor. We also, at various times, furnished the plumbing contractors with a booklet entitled, "Hot Water," which, through our radio program and other advertising, we advised our customers, could be obtained by calling at his place of business.

The response of the plumbing contractors to these efforts on the part of the gas company to enlarge dealer sales has been a matter of considerable satisfaction to the gas company. During 1935 over 200 plumbing contractors have sold automatic water heaters in the city of Chicago. In one or two outstanding cases sales of as high as 100 heaters have been made during the course of the year, and many others have made sales ranging from 10 to 50 heaters.

In Chicago the gas company, we believe, has effectively indicated its desire to encourage the manufacturer and the plumbing contractor to continually maintain aggressive sales representation. To do this we have felt that it was necessary to permit these agencies to do business under the same terms as ourselves. We consider that the plumbing contractor is just as much a part of our selling organization as the salesman on our own payroll.

We welcome enthusiastically the plumbing contractor in his capacity as a merchant, and we are confident that he will continue to actively and aggressively cooperate with us in the distribution and sale of high grade, efficient equipment. In this capacity as a merchant, he has an equal responsibility to the utility and to the customer, in that he recognizes that if the customer is to be properly served, both the equipment and its installation must conform to sound practice and be conducive to good public relations between our customers and ourselves.

John Montgomery of American Meter Passes Away

John E. Montgomery, who for the past 16 years has represented American Meter Co. in the southern states, died March 3 in Birmingham, Ala.

Mr. Montgomery was born in 1870. Starting his career as a master plumber in Huntsville, Ala., he subseqently joined the gas company in Cincinnati, Ohio. Later with the old Birmingham Railway Light & Power Co., he became superintendent in charge of street main work and distribution. During his service with the Birmingham company, he knew and trained many men who have since advanced to prominent executive positions in the industry.

Mr. Montgomery joined the Maryland Meter Works staff in 1920 and continued to represent American Meter Co. until a few days before his death.

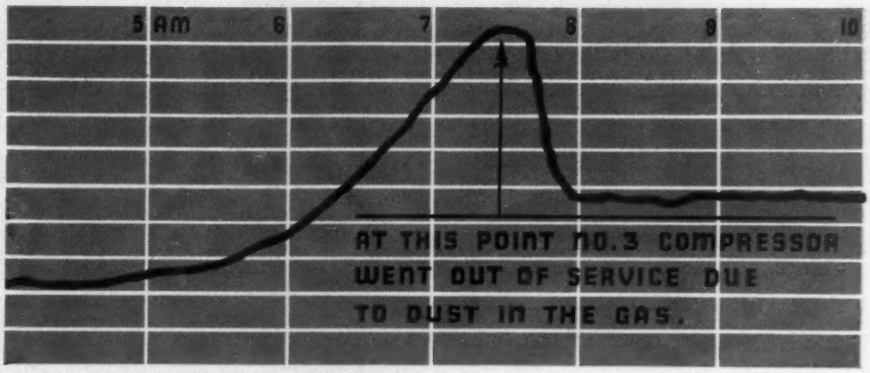
Consolidated of N. Y. Changes Name

Stockholders of the Consolidated Gas Co. of New York, at a meeting on March 16, voted to change the name of the company to the Consolidated Edison Co. of New York, as it will henceforth be known. The name was changed, in anticipation of a projected merger of several subsidiaries.

THIS MIGHT HAPPEN TO ANY

UNPROTECTED

COMPRESSOR



The curve shows the time the #3 gas compresssor in a large pumping station broke down due to dust in the gas. It was repaired at high cost as it simply had to be put in operation with the least possible delay.

After this an installation of Blaw-Knox Gas Cleaners was made to avoid a recurrence of this preventable and expensive annoyance.

There is no mystery about Blaw-Knox Gas Cleaners. They wash out all of the dust and debris and admit nothing but clean dry gas to the compressors.

Write for detailed information and engineering advice about the best and most economical installation of this equipment to fit your conditions.

BLAW-KNOX GAS CLEANERS

BLAW·KNOX COMPANY

2033 FARMERS BANK BUILDING PITTSBURGH, PENNSYLVANIA

AIR CONDITIONING

Electrogas

HEATING EQUIPMENT

FURNACES BLOWERS FILTERS WASHERS

Write for attractive Dealer proposition

ELECTROGAS FURNACE & MANUFACTURING CO.

2575 Bayshore Boulevard, San Francisco

REFRACTORIES

GENERAL CERAMICS COMPANY

• REFRACTORIES •

For Conversion Burners, Circulating Heaters, etc.

Because they are uniformly accurate, strong, and dependable in every way, General Ceramics Refractories are used by most of the leading manufacturers of gas heating appliances. • Our engineers will gladly cooperate with you.

General Ceramics Company, 30 Rockefeller Plaza, New York

GOODMAN USED SINCE 1897 2" HANDLE & LOCKING SLEEVE GAS MAIN STOPPER

The Goodman Stopper

The Reliable Shut-off for Street Mains

Equipped with Improved Patented Locking Sleeve, which locks both handles to the pipe. Stopper cannot slip. Gas cannot pass.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, N. Y.

Pac. Coast Rep.: C. B. Babcock Co.
135 Bluxome Street
San Francisco, California

COMBUSTION EQUIPMENT

For every firing and controlling requirement including a full line of the finest conversion burners ranging in price from 7.50 to 150.00.

NEMEC COMBUSTION ENGINEERS, WHITTIER, CALIF.
San Francisco, 780 Bryant St. Phoenix, 530 W. Adams

ENSIGN

NATURAL GAS CARBURETOR

Hundreds of ENSIGN Natural Gas Carburetors in service have proved themselves to be more economical in fuel consumption per horsepower-hour than any other type of equipment. Made with improved fuel regulator, and designed for all types of multiple cylinder stationary engines—and, where gas fuel is available, they offer exceptional economies in power costs. Easy, no-prime starting; smooth operation; no floating parts; require practically no attention. Write for detailed information.

Pioneers in the manufacture of scientific carburetting equipment for developing efficient, dependable and economical power for all requirements.

ENSIGN CARBURETOR COMPANY, Ltd.
7010 South Alameda St. (P. O. Box 606) Huntington Park, Calif.
Mid-Continent Distribution and Service Facilities Maintained By:
A. W. Schuller, Inc., 114-116 E. 9th St., Tulsa, Okla.
The Binkley Co., Oklahoma City, Okla.
Portable Rig Co., Houston, Dallas and Longview, Texas

Special Mystery Chef Program for Middlewest Executives

REPRESENTATIVES of a large group of Middlewest utilities were present at a demonstration broadcast of the Mystery Chef program, Monday night, March 9, in the Chicago studios of the National Broadcasting Co. Charles W. Person, secretary of Regional Advertisers, Inc., organized to supervise details of the Mystery Chef broadcast, acted as master of ceremonies, presenting the Mystery Chef first in a demonstration broadcast and later in person.

The demonstration was aimed at arousing the interest of Middlewest utilities in joining the broadcast which is being conducted with phenomenal success in the East, utilities extending from Washington, D. C. to Portland, Maine, and from New York to Buffalo participating.

Testimonials from many of the companies concerning the success of the broadcast were presented to the meeting by Mr. Person. He also stated that during the first two and a half months of actual broadcasting nearly 500,000 customers of participating utilities called in person for the 100-page recipe book entitled "Be an Artist at the Gas Range," offered free to listeners.

Prior to the local demonstration several N.B.C. artists were presented in feature numbers. Utility executives from Illinois, Wisconsin, Indiana and Missouri attended the meeting.

General Controls Announces New Valve for Industrial Furnaces

A new slow-opening gas valve, Type B-55 is announced by the General Controls Co. of San Francisco. This dual-purpose, electrically operated valve for industrial furnaces and gas-fired boilers controls at once the louvre-door and the flow of gas.

It opens slowly the louvre-door slightly ahead of the gas flow to the burners. Gas is bled into the furnace only during the opening period. This provides a flare pilot effect which ignites the main gas flow. Opening time is adjustable from 5 to 60 seconds. Closing time is fixed from 3 to 6 seconds, thus giving a fast shut-off. Increase of gas flow is made uniform by the use of a Uniflow valve guide. Pilot valve is the General two-wire, current-failure, A. C. solenoid.

Barnum Elected A. S. A. President

Dana D. Barnum, president of the Boston Consolidated Gas Co. and third president of the American Gas Association, was recently elected president of the American Standards Association, succeeding Howard Coonley. Edmond A. Prentis, of Spencer, White and Prentis, Inc., New York, was elected vice-president. J. C. Irwin and F. M. Farmer, chairman and vice-chairman respectively of the A. S. A. Council, were re-elected.

Quinn and Hiscox Get Promotion

John F. Quinn, who has been associated with the Central Arizona Light and Power Co. for eleven years and for the past several years has been commercial manager, has been promoted to the position of Phoenix manager.

Shepard Hiscox, who has been connected with the company for three years, has been appointed executive assistant to the president and vice-president of the company.

"Clean Up Campaign" is Off with a Good Start

The Gas Water Heater Division of the Association of Gas Appliance & Equipment Manufacturers announces that as of March 14, 346 gas companies and 1,566 plumbers throughout the country had registered in the national gas water heater "Clean Up Campaign." The contest opened February 1 to run for eight months until September 30. There is still time for companies and dealers not yet registered to participate, particularly in the two-month special drive for which each company may select any two consecutive months within the eight month period. For the two-month special efforts, in addition to the general prizes for the contest, $10 monthly prizes will be awarded to ranking salesmen.

The Clean Up Campaign is aiming at a goal of 300,000 unit sales.

P. G. and E. Absorbs Great Western Power Co. of California

In line with the Pacific Gas and Electric Co.'s policy to absorb its subsidiaries as circumstances permit, stockholders of the Great Western Power Co. of California and its subsidiary the California Electric Generating Co. have been notified that these companies will be absorbed by P. G. and E. Great Western stockholders will receive the par value of their holdings, plus accrued dividends to March 31, 1936. P. G. and E. owns all the common stock and 98.6 per cent of the preferred stock of Great Western.

Death Comes to J. A. Harritt of San Diego Company

THE sudden death on March 2 of J. A. Harritt, superintendent of gas production for the San Diego (Calif.) Consolidated Gas and Electric Co., is deeply mourned by his many friends within the gas industry. His fine personality made a lasting impress upon gas men of the Pacific Coast who knew him intimately in his 27-year connection with the San Diego company. His death leaves a void within his own company where his associations were of the closest; he was counted as personal friend by the rank and file of San Diego Consolidated employees.

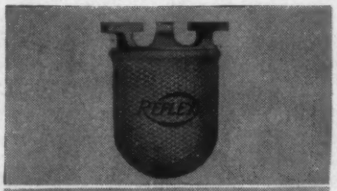
J. A. HARRITT

Educated as a mining engineer, Mr. Harritt came to the San Diego company in 1908. Beginning as a laborer he was soon directing manufacturing operations, and for most of his 27 years with the company was superintendent of production. He did pioneer work on several phases of oil gas manufacture and was known throughout the industry for his service in this field. In 1932, together with Frank Wills and Leon J. Willien, he developed a process for manufacturing high B.t.u. gas from Diesel oil, to serve as substitute for natural gas. He also contributed to the development of liquefied petroleum gas for standby use. For a paper covering the Diesel oil process, in which he was co-author with Messrs. Wills and Willien, he received a gold medal award from the Pacific Coast Gas Association, in which organization he held membership for 14 years.

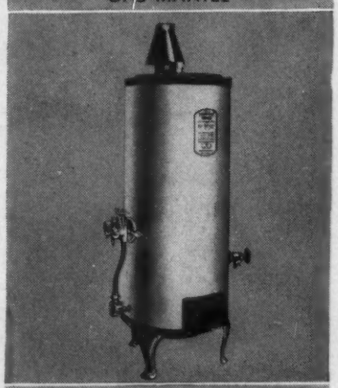
T. V. A. Area Gas Company Volunteers Rate Reduction

National Utilities Co., which serves Florence, Ala., in the heart of the T.V.A. area, has volunteered a reduction in its gas rates. The new rate is as follows: For the first 300 cu. ft. or less consumed per month, $1.50 net; for the next 4,700 cu. ft., $1.50 net per M c.f.; for all consumption in excess of 5,000 cu. ft. per month, $1 net per M c.f. These net rates are applicable if bill is paid within 10 days, and if it is not paid within 10 days, 10 cents is added to each rate.

An inducement rate is set up which provides that a customer using more gas during the current month than during the corresponding month of the year ended January 31, 1936, will be billed at 80 cents net per M c.f. for all gas used in excess of that amount. In addition, the company is offering an objective rate under the terms of which $1.50 net per M c.f. is charged for the first 3,000 cu. ft., and 80 cents net per M c.f. for all in excess of 3,000 cu. ft. The company makes a minimum monthly charge of $1.50 net.



GAS MANTLE



HOTZONE GAS WATER HEATER

HOTZONE BROILER-GRIDDLE

HOTZONE GAS WATER HEATERS

Hotzones are in the news because they are setting the pace in the National "Clean-up" Contest on Water Heaters. This is attributable to the fact that Hotzones have won their popularity through years of efficient, economical service.

Furthermore, Hotzones have an established reputation from coast to coast for low operating cost and a minimum of service requirement.

Get your share of the water heater contest prizes—sell Hotzones.

X-RAY VIEW HOTZONE GAS WATER HEATER

Welsbach COMPANY

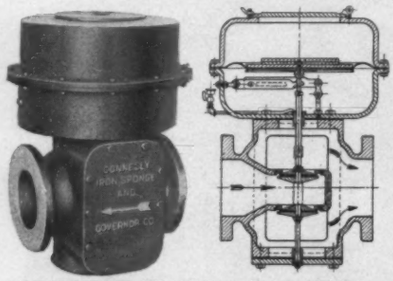
Gloucester, N. J.

BRANCHES IN CHICAGO AND SAN FRANCISCO

Since 1887 Pioneers in the Manufacture of Gas Burning Appliances

CONNELLY REGULATORS

District—Type LC



ADJUSTABLE TRAVEL: Balanced Valves with hard or soft seats; Renewable Valve Ports; Double Guided Stem; Remote Control if desired.

FLEXIBILITY: Connelly District Regulators have adjustable linkage between the diaphragm and valve stem which provide unusual power for valve movement and also permits changes to various ratios of travel to obtain the best operating characteristics. The latter is especially valuable when pressure and volume are altered.

ACCESSIBILITY: The large side plates and bottom plates give the maximum of access whenever it is necessary to inspect, clean or change any parts.

PRODUCTS: Caloroptic BTU Indicator; Regulators for District, Service and Appliance; Back Pressure Valves; U-Gauges; Purifying Materials, mixed and unmixed. Send for Bulletins.

\+ + +

Connelly Iron Sponge & Governor Company

Chicago, Illinois: 3154 South California Avenue
Elizabeth, New Jersey: 200 South Second Street
N. E. Agent—T. H. Piser, Waban, Massachusetts

PACIFIC

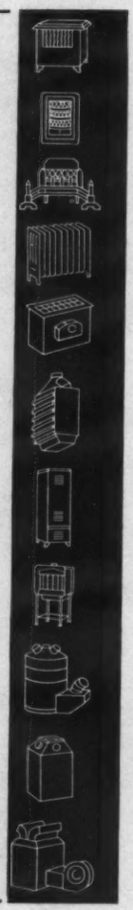
Gas Heating Appliances

- Circulator Heaters
- Radiant Wall Heaters
- Gas Steam Radiators
- Floor Furnaces
- Gravity Furnaces
- Blower Furnaces
- Unit Heaters
- Forced Air Units
- Water Heaters

Write for Catalog No. WG-3

PACIFIC GAS RADIATOR CO.

Huntington Park, Calif., U.S.A.



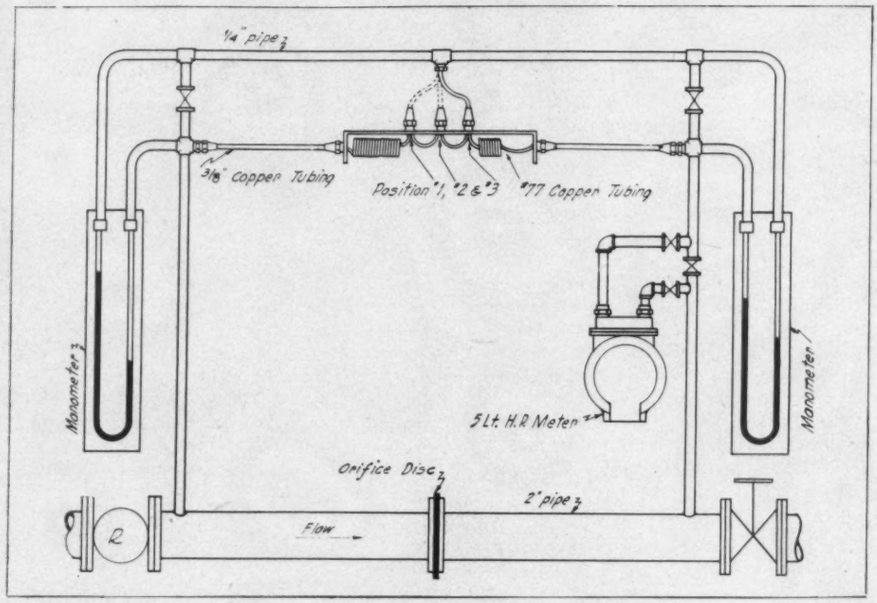


FIG. 2.

The Intermediate Pressure Device

(Continued from Page 43)

little with a fluctuation in total differential from 2 to 28 inches.

C. The Clark Connection tested had a range from zero to 37 per cent of the differential available for addition to the downstream pressure instead of the usable range of 12½ per cent. Therefore each of the 10 discs was expected to affect the percentage obtained by 3.7 per cent. Tests made at various pressures and differentials showed the percentages for the different discs to vary from 1.7 to 6 per cent.

II. *Tests to Determine the Amount of Gas By-Passed Through These Devices*:

The gas passing through the device is unmetered and therefore directly affects the "unaccounted-for." Our tests, with a differential of 35 inches, showed the following amounts of gas bypassed (in cubic feet per hour):

Gauge Pressure	Cotigas (cu. ft.)	Metric (cu. ft.)	Clark (cu. ft.)
10 lbs.	.17	5.00	.40
40 lbs.	.31	9.00	.81
70 lbs.	.59	no test	1.60

The gas bypassed in no case is great but does affect the economy of operation.

Evaluation

1. *The Cotigas Type* can be made to give very accurate percentages if consideration is given to the effect of the outlet connections and if tubing is used that has not previously been subjected to bending. If in constructing the device the lengths of tubing used are so arranged as to add 36, 32, and 28 per cent of the differential to the downstream pressure, the error introduced under average conditions will not exceed .15 per cent. If greater accuracy is desired, longer lengths of tubing can be used and more outlet connections added. When installing at the meter, a sufficient amount of copper tubing should be used in connecting the outlet to the static element to allow ample swing to connect to the other outlet positions. It is very important that there be no leaks in this piping between the device and the static element, as the low rate of flow through the device would permit a low recorded pressure.

2. *The Metric Connection* is effective to record mean pressures but because of the short tubing used is not readily adapted to extremely accurate divisions of the differential. However, with care in cutting tube lengths to exact size, close accuracy may be obtained.

(In one test the short tubing was replaced by two ⅛-inch O.D. copper tubes 12-inches in length coiled inside the chamber. The percentages obtained were 49 and 51, which is sufficiently close to the expected 50 per cent).

3. *The Clark Connection* has a valuable feature in that changes in the intermediate pressure can be effected instantly by moving the piston to the desired position. It is claimed that this device can be made to subdivide the necessary 12½ per cent of differential by increasing the thickness of the discs. If this is the case there would be many intermediate pressures available and there would be a decrease in the amount of gas bypassed. A possible weak point in this device is the packing gland, but this observation is merely based on the assmuption that most packing glands give trouble. Because of the machine work this device is more costly to produce than the others.

Any of these devices will give fairly satisfactory results. It is questionable whether the additional accuracy secured by using more than one intermediate pressure, other than that which will add approximately 33 per cent of the differential to the downstream pressure, is warranted.

Although the intermediate pressure device is not in general use at the present, it is becoming more favorably considered, particularly when measurment is at the lower pressures, as an acceptable means of eliminating some of these more recently developed computation complications.

Roper Issues New Catalogue on 1936 Models

Geo. D. Roper Corp., Rockford, Ill., has issued a new catalogue covering the company's 1936 line of new models. The catalogue is attractively gotten up in 24 pages and is illustrated with photographs throughout. The first illustrations show the Roper ranges in a modern kitchen setting, and these are followed by a description of the

features of an improved burner with which the ranges are equipped. Next follow a number of photographs illustrating a sales presentation to a prospect and point out the new features, and are followed by shots of the manufacturing process.

In an envelope compartment in the back cover of the catalogue are six four-page folders on the various models, two additional leaflets on other models, a leaflet on the color of finishes available and a leaflet on the company's line of gas hot plates.

North Shore Gas Cooking Demonstration

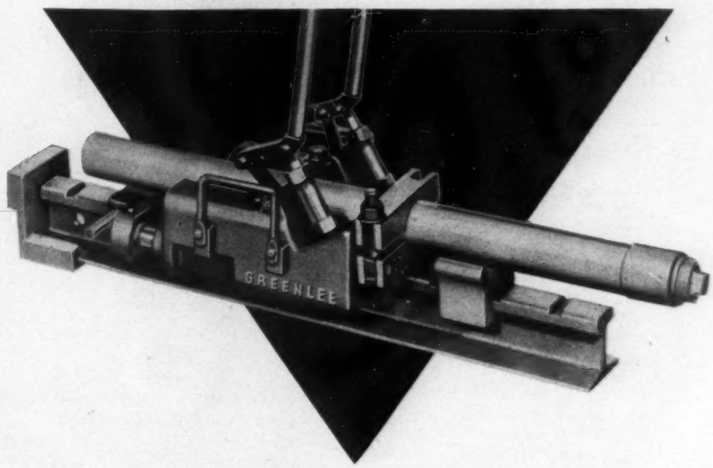
North Shore Gas Co. in cooperation with the Highland Park (Ill.) Press, presented Phil Libby, a food expert and former chef, in a series of cooking demonstrations in February. The demonstrations were held each day from 9 a. m. to 5 p. m. for a 10-day period in the model kitchen on the sales floor of the gas company office.

Mr. Libby who has a collection of 8,500 recipes was featured in newspaper publicity and advertising as inviting requests from women of the city for cooking information and recipes.

14th Midwest Safety Conference

Approximately 3,000 delegates are expected to attend the 14th Annual Midwest Safety Conference to be held at the Stevens Hotel, Chicago, May 5 to 7. Delegates from Illinois, Indiana, Iowa, Michigan, Missouri and Wisconsin will attend the conference which is sponsored by the Chicago Safety Council, the Illinois Industrial Commission, the Keep Chicago Safe Committee and other cooperating agencies.

Push Pipe the Easy Way



Greenlee Hydraulic Pipe Pusher

Much time and labor can be saved by using the Greenlee Hydraulic Pipe Pusher, as compared to trenching or using a pusher that requires so much man power to operate it. With the Greenlee, one man can stand in a comfortable position and exert a pressure of 40,000 pounds on the pipe clamp. Eight speeds are provided for varying soil conditions.

The Greenlee Pusher is self-contained. It operates on a notched steel base, which can be furnished in various lengths. After forcing the pipe forward 4 inches, the handles are depressed to release the pressure while springs within the body quickly bring the pistons up to a new notch. This operation is repeated until the end of the base is reached, when the machine is pushed to the opposite end and the pipe clamp reset. This means that pipe clamps are changed only every 4 to 7 feet, depending on the length of rail used.

It will pay you to investigate this improved method of making underground installation of pipe, because of the savings that can be made. A letter or postcard will bring complete information. No obligation on your part, of course.

Write Now for Complete Details

GREENLEE TOOL CO., 1700 Columbia Ave., ROCKFORD, ILL.

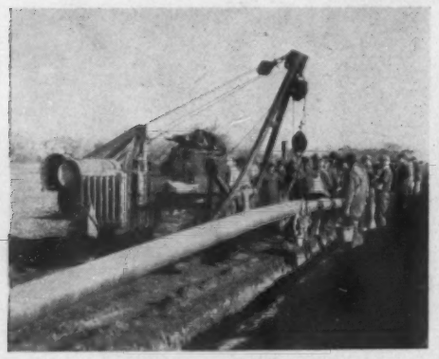
Advanced and proven design, precision manufacture and complete engineering service, insuring successful application and installation, are the salient features of N.G.E. Gas Burning Equipment. Your request for descriptive Bulletins will receive prompt attention.

NATURAL GAS EQUIPMENT INC.

1123 Harrison St. San Francisco
Petroleum Securities Bldg. Los Angeles
1024 Truxtun Ave. Bakersfield

LOOK TO THE PIONEERS FOR CONTINUED LEADERSHIP

"Are planning reconditioning work. How soon can you be here?"



This telegram has just been received from a company which used the NO-OX-ID Master Coat on a long line last year. Recommendations and estimates supplied gladly.

DEARBORN CHEMICAL COMPANY
Los Angeles: 807 Mateo Street, Phone TRinity 3385
San Francisco: 421 Bryant St., Phone SUtter 8683

NO-OX-ID
IRON-RUST
The Original Rust Preventive

SCIENCE AND ENGINEERING SKILL CREATED

GLO-FIRE

APPROVED, ODORLESS GAS LOGS

The solution to your fireplace heater load problem . . .

They open up a vast fireplace market that heretofore has been closed to gas.

ODORLESS
NATURAL
ECONOMICAL
A.G.A. APPROVED

The GLO-Fire Odorless gas log is a circulating, unvented gas heater, available in two sizes—24-inch logs with a rated input of 28,000 B.t.u., and 20-inch logs with rated input of 17,500 B.t.u.

WRITE TODAY FOR DETAILS
EXCLUSIVE DISTRIBUTORS
COLONIAL SHOPS
DISTINCTIVE FIREPLACE FIXTURES
3350 W. FIRST ST. LOS ANGELES

Oil Gas for A. G. A. Laboratory at Los Angeles

SOUTHERN California Gas Co. is now supplying the American Gas Association Testing Laboratories at Los Angeles with oil gas needed in the Laboratories' appliance testing. The company has allotted a 150,000 cu. ft. relief holder for maintaining a supply of the gas for this purpose, according to Lee Holtz, superintendent of manufacture and distribution.

Southern California Gas Co. fires its oil gas standby plant each fall and keeps it hot throughout the winter high heating demand season, thus making it an easy matter to supply the demand of the Laboratories. At present there are some 128,000 cu. ft. of oil gas in the holder at low pressure.

The gas must meet the following specifications for the Laboratories' use: B.t.u. content of 580; gravity of 369; 1.80 per cent CO_2, 2.90 per cent C_nH_{2n}, .60 per cent O_2, 50.40 per cent H_2, 4.00 per cent CO, 34.50 per cent CH_4, .80 per cent C_2H_6, and 5.00 per cent N_2.

The laboratories' demand for the gas is about 5,000 cu. ft. per month. It is taken from the relief holder through a purifying box and compressed to about 1,800 pounds per sq. in. into portable tanks for transportation to the Laboratories.

This supply was formerly obtained from the oil gas plant at Escondido, which necessitated a haul of about 142 miles, whereas the Laboratories are but a few blocks from the Southern California Gas Co. holder. A new source of supply was made necessary due to the San Diego Consolidated Gas and Electric Co. recently having completed arrangements for bringing natural gas to Escondido.

Oklahoma Association Elects 1936 Administration

FROM Oklahoma Utilities Association headquarters at Oklahoma City, notice has been received of the election of the following officers and directors for the current year:

Officers:

President, C. A. Breitung; first vice-president, J. P. Arnold; second vice-president, J. Y. Wheeler; secretary and treasurer, W. R. Emerson.

Executive Board:

C. A. Breitung, vice-president and Oklahoma manager, Southwest Gas Utilities Corp., Ada, Okla.; J. P. Arnold, Public Service Co. of Okla., Tulsa, Okla.; J. Y. Wheeler, state manager, Community Natural Gas Co., Wynnewood, Okla.; W. R. Emerson, vice-president and treasurer, Oklahoma Gas and Electric Co., Oklahoma City, Okla.

Gas Division Board Members:

Jennings Young, vice-president, Oklahoma Natural Gas Co., Tulsa, Okla.; B. F. Pickard, general manager, Central States Power and Light Corp., Tulsa, Okla.; W. L. Woodward, president, Zenith Gas System, Inc., Alva, Okla.; A. F. Potter, manager, Bartlesville Gas and Electric Co., Bartlesville, Okla.

Electric Division Board Members:

Glen C. Kiley, manager, Oklahoma Gas and Electric Co., Oklahoma City, Okla.; W. B. Head, Jr., president, Oklahoma Power & Water Co., Sand Springs, Okla.; J. F. Owens, president, Oklahoma Gas & Electric Co., Oklahoma City, Okla.; Fred W. Insull, president, Public Service Company of Oklahoma, Tulsa, Okla.

Division Officers:

Gas Division—chairman, Jennings Young, vice-president Oklahoma Natural Gas Co., Tulsa, Okla. Electric Light Division—chairman, Glenn C. Kiley, manager, Oklahoma Gas and Electric Co., Oklahoma City, Okla.

SALESMAN WANTED

An excellent opening for an experienced gas burner salesman capable of handling a complete line of burners for the manufacturer. Must be fully qualified and experienced.

NEMEC COMBUSTION ENGINEERS
319 West Whittier Blvd. Whittier, Calif.

HYDRAUGER

MODERN HORIZONTAL BORING MACHINE

For Underground Installation of Pipe and Conduits. Avoids damage to costly pavements and saves time. Send for Bulletin.

HYDRAUGER CORPORATION, Ltd.
116 New Montgomery St.
San Francisco, Calif.

A.G.A. to Hold General Commercial Sales Conference

On May 25 and 26 the Industrial Gas Section of the American Gas Association will hold a combined sales conference that will cover general commercial applications of gas and hotel, restaurant and other commercial cooking subjects. This conference will be held in Washington, D. C., at the Mayflower Hotel.

Information on the newer and improved gas cooking apparatus and other commercial gas equipment will be presented by men who have made close studies of present day requirements; and methods of promoting the sale of gas in these fields will be explained by experts. This conference will be the only one of its kind to be held this year.

Inland Issues New Bulletin

The Inland Manufacturing Co., Chicago, has recently issued a new bulletin describing its line of gas specialties. The products, which are fully described in this bulletin, embody many new improvements in design and construction.

Copies of this new circular, Bulletin No. 17, may be obtained direct from the Inland Manufacturing Co.

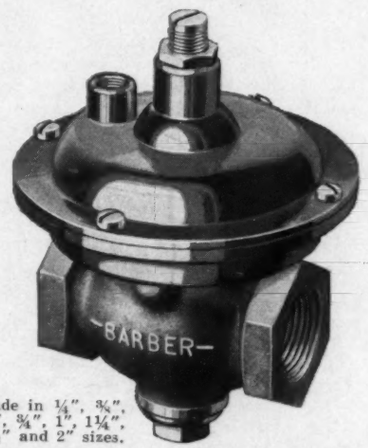
P. G. and E. Lodi Office Remodeled

The Lodi, Calif., office of the Pacific Gas and Electric Co. has just been completely remodeled at a cost of about $6,000. Much additional space has been allotted for floor and window displays, giving the new office a decidedly attractive appearance.

The A.G.A. Approved

BARBER Gas Pressure Regulator

—means Better Performance for Appliances You Sponsor or Sell



Made in ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2" sizes.

THE vital part played by a **dependable** Pressure Regulator in the satisfactory, economical performance of **any** Gas Appliance is a matter of more and more concern to gas authorities. Do the Regulators **you** use comply with A.G.A. Specification requirements as to pressure drop. The Barber Gas Pressure Regulator is **not** the usual **competitive** product, but an accurate device of superior construction throughout, and listed in the A. G. A. Directory of Approved Appliances.

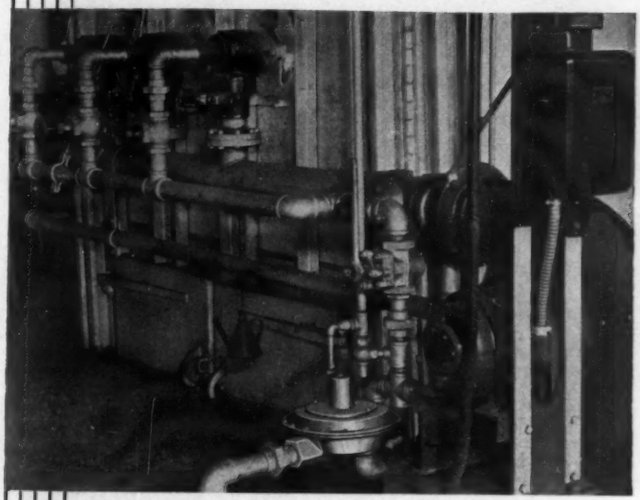
Barber Regulators are winning wide preference because of exceedingly low pressure drop, compact design, all-bronze bodies, and precision of operation. **Reliable** Pressure Regulators greatly reduce service calls and complaints on gas bills.

Write for complete literature, prices and discounts on the entire Barber line of Burners and Regulators.

THE BARBER GAS BURNER COMPANY

3704 Superior Ave., Cleveland, Ohio

Industrial



A Reynolds Industrial Regulator in service at the Chicago Heights Plant of the Columbia Tool Steel Company.

Greater capacity . . . increased range . . . quicker response . . . these are decided advantages of Reynolds Improved Gas Regulators for industrial control. They assure smooth, constant outlet pressure and volume even though inlet pressure and volume are irregular. Manufactured in single or double valve construction, Reynolds Industrial Regulators are proved by performance in factory tests and on installations throughout the world.

REYNOLDS PRODUCTS

High Pressure Service House Regulators—Straight Lever Type—Models 0-10-20 series; Toggle Lever Type—Model 30 series.

Low Pressure Service or Appliance Regulators.

District Station Regulators, Single or Double Valve—Auxiliary Bowl and Automatic Loading Device Optional.

High Pressure Line Regulators—Pilot Loaded—Pilot Controlled.

Toggle Type Regulators—Single Valve, Double Valve, Triple Outlet.

Seals—Dead Weight or Mercury. Back Pressure Valves . Automatic Quick Closing Anti-Vacuum Valves . Automatic Shut Off Valves . Lever Operated Valves . Louver Operated Device . Atmospheric Regulators . Vacuum Regulators.

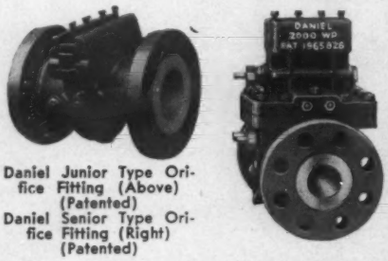
Branch Offices:
421 Dwight Building
Kansas City, Mo.
2nd Unit,
Santa Fe Bldg.
Dallas, Texas

Representatives:
Eastern Appliance Co.
Boston, Mass.
F. E. Newberry,
Avon, N. J.

REYNOLDS GAS REGULATOR CO.

ANDERSON, INDIANA, U. S. A.

GAS CONTROL SINCE 1892



Daniel Junior Type Orifice Fitting (Above) (Patented)
Daniel Senior Type Orifice Fitting (Right) (Patented)

DANIEL ORIFICE FITTINGS Meet All New A.G.A. Requirements

The Industry's endorsement of DANIEL Orifice Fittings is based upon tested and proved performance under the most severe conditions. Repeat orders, in growing numbers, from satisfied DANIEL users are convincing proof of the fact that it **pays to standardize** on DANIEL Orifice Fittings. Write for prices, specifications and technical data.

DANIEL ORIFICE FITTING COMPANY
2719 Elm St. Phone CA 9228 Los Angeles, Calif.

Let's Get Together!

You folks sell natural gas and the appliances to consume it. We manufacture the best heating equipment money can buy. Let's get together. We'll agree that natural gas is the best fuel for heat, but are the heating appliances you sell as good as the gas they consume? Do they give the consumer "controlled winter comfort"? Only WARD, with its exclusive Bilt-In Thermo-Control, Cradle Circulation, Automatic Pilot, makes this possible. To put it briefly, your load is as good as the appliances you sell . . . sell WARDS.

For further load-building information, call, phone, or write . . .

WARD HEATER CO.
1800 W. WASHINGTON
LOS ANGELES, CALIF.
PArkway 9171

FIRST in Meeting The Needs of MODERN GAS HEATING

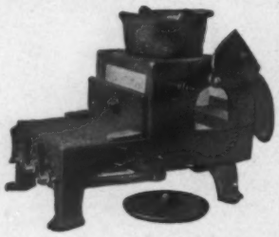
PAYNE Floor type Furnaces answer the need for heating single or groups of rooms or for heating entire small homes. Payne Console Heaters are without equal in the field of circulating type room heaters.

And, NOW, Payne offers complete Winter Air Conditioning in a single unit. The twenty-two years of experience in designing, manufacturing and installing gas heating equipment exclusively is your assurance of products of merit.

It makes no difference what the heating problem, there is a sufficient range in the Payne line to cover every need. Single rooms, small homes, churches, theatres or industrial buildings. If it can be heated with GAS, it can be Payneheated.

PAYNE FURNACE & SUPPLY CO.
338 No. Foothill Road . . . Beverly Hills, California

EVERY SHOP NEEDS THIS FURNACE
Johnson No. 118



The Johnson Combination Bench Furnace is widely accepted as the last word in strength, utility, and efficiency. It is compact and quick-acting. It performs a variety of important jobs. Needed in every battery shop, machine shop, sheet metal shop, and auto repair shop. Write for full details.

JOHNSON GAS APPLIANCE CO.
Cedar Rapids IOWA

Western Representative:
C. B. BABCOCK CO.
135 Bluxome Street
San Francisco, Calif.

Eastern Representative:
J. H. McPHERSON
250 Stuart Street
Boston, Mass.

The Heat Wave

(Continued from Page 10)

the heat hours of gas load to be credited for the various appliances to be sold. Later, during the contest it rated the various miscellaneous appliances for contest purposes as they were sold. Credit on the more common domestic appliances was given according to the scale shown in Table No. 1.

While working in a given district, a contestant's heat hours of business produced was credited to the district in which the prospect originated. The members of any district were determined at the close of the contest as those employees who worked in a given district for a longer period of time than in any other district during the contest.

To guard against a high volume of poor prospects that might be submitted by a contestant in an effort to increase his total score, the following provision was incorporated into the rules of the contest: Every request for a sales interview by a dealer or a dealer representative which did not result in a sale before December 1, 1935, reduced the score of the man submitting the prospect by 100 heat hours. These penalties were termed "icicles." However, it was not found necessary to impose them.

All prospects submitted by each man were posted by months on an individual form. The forms called for tabulation under the following column headings: Date of prospect card, address of prospect, kind of appliance prospect wants, distribution district in which prospect is located, date prospect sent to sales department, not released, and remarks.

District standings were recorded for the whole campaign on a form divided into the following columns: Employee's name, eight columns for the various kinds of appliances sold including one for miscellaneous appliances, total appliance sales, total heat hours, icicles, and degrees of temperature. Table No. 2 gives the final total results of "The Heat Wave."

It will be seen from Table No. 2 that a total of 2,205 appliances were sold, resulting in an estimated 14,887,315 cu. ft. of annual gas load. It is also interesting to note that an average record of 375.21 degrees per man day worked during the contest was achieved.

Advance publicity for "The Heat Wave" was bulletinized throughout the several districts in black letters on a red background. The complete contest announcement story was published in the June 28 issue of "The Gas-ette," house organ of the Gas Distribution Department. The contest slogan was "Turn on the Heat," implying that as more load was added in each district the higher became the district's standing as registered on its thermometer. "Turn on the Heat" was painted on large canvas banners (illustrated in Fig. 2 and Fig. 3) that were placed conspicuously over the exit of each district headquarters. Windshield stickers carrying "Turn on the Heat" were placed on the lower right hand corner of the windshield of every Gas Distribution Department assigned car for the duration of the contest.

Those appliance prospects in the market for new or additional equipment were forwarded directly to the sales department,

from whence they were routed to the various dealers. The usual monthly dealer report to the sales department representatives giving specific results on the prospects received by him, constituted the chief source of sales information on current results.

A check of the premises by a disinterested employee—not affiliated with any team—was made on those prospects not otherwise accounted for up to December 1, the close of the contest.

"The Heat Wave" offers tangible evidence that a gas distribution department can utilize its employee customer contacts to secure definite load-building results. There is evidence, also, from this experience, that sales responsibility puts the department personnel on the alert for opportunities to make the most of every customer contact, from a sales as well as a service viewpoint.

While it is realized that this load-building effort was made at some additional cost, viz., increased time on the customers' premises, no attempt was made to isolate it. In general, no appreciable jump in unit costs was noted during the contest.

"Modern Homecraft" Is New Type Customer Publication

BEARING on its cover a pleasing photo of Uno Merkel, Metro-Goldwyn-Mayer star, a consumer publication known as "Modern Homecraft" came from the press last month—produced as a cooperative activity of gas appliance dealers and manufacturers for distribution among Los Angeles Gas and Electric Corp. patrons. A. T. Gray, of L. A. G. and E.'s advertising department, in charge of dealer advertising, handled the project.

The publication is planned for issue every other month, and will be distributed at company collection windows, over dealers' counters, through gas distribution department service men, at cooking schools, through cooperative displays, etc. A printing of 100,000 is anticipated for the first edition, which was a 16-page issue.

In point of style, "Modern Homecraft" is up to the minute—printed in rotogravure in modern type faces, with abundant illustration. Page size is 7¾ by 10¾ inches. Una Merkel, at home in her all-gas kitchen, gets the play in a double-spread of views. Diversified recipe information, including frozen desserts, occupies a good deal of space. General interest features include paragraphs on miscellaneous household suggestions and a semi-editorial page on the place of modern appliances in the housewife's scheme of things.

Wyoming-Minnesota Pipe Line Proposal Submitted to President

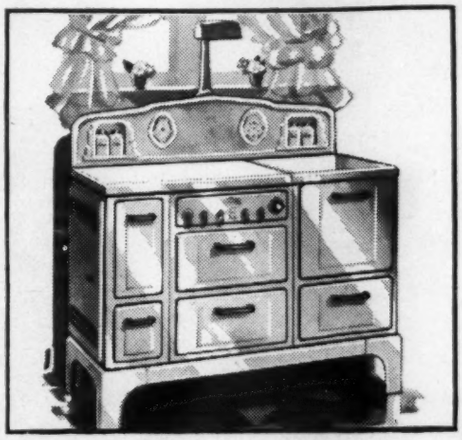
It is understood that the National Resources Board has taken under advisement a proposal for financing a 1,500-mile 24-inch natural gas pipe line from Wyoming and Montana to Minnesota with Federal funds. The plan was laid before President Roosevelt by F. M. Murphy and J. W. Schmidt, the latter representing the Northwestern Independent Natural Gas Producers Association.

The proposed line would originate in Wyoming and Montana natural gas fields and extend eastward through North Dakota and Minnesota to Minneapolis and St. Paul, serving numerous domestic and industrial consumers along the route.

★ *This* **IS** *Frontpage* **NEWS!**

WEDGEWOOD'S NEW

LOW-TEMPERATURE OVEN BURNER



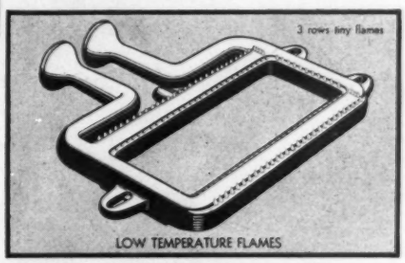
ON THE LATEST 1936 DELUXE WEDGEWOOD MODELS

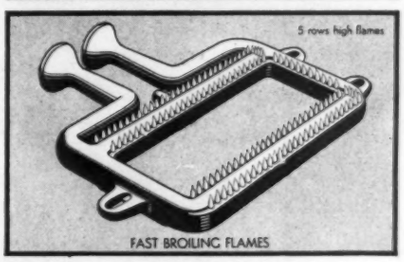
★ SELF-LIGHTING BURNER—NO MATCHES
★ NO OVEN PRE-HEATING
★ NO SEARING OF MEATS
★ NO COVERING
★ NO BASTING OF FOWL OR ROAST
★ TENDERIZES ALL MEATS
★ REDUCES MEAT SHRINKAGE
★ NO OVEN WATCHING OR OPENING
★ SEARS IN FLAVORS AND JUICES
★ PERFECT FRUIT AND SPONGE CAKE
★ PERMITS OVEN CANNING
★ REDUCES AMOUNT OF WORK
★ KEEPS KITCHEN COOLER

Like magic, Wedgewood's new low-temperature oven burner opens a new world of oven cookery! S-l-o-w roasting seals in natural juices, making meats the most delicious and digestible you have ever tasted! Decreases meat shrinkage about 20%! Bakes the most delicate cakes and custards better than any other method. Takes practically all of the hard work out of baking and roasting. Wedgewood's new low-temperature oven burner plus the aluminum Astogril Broiler and the new Speed-plus-Simmer burner make Wedgewood gas ranges the finest of all cooking methods.

NEWEST GRAYSON CONTROL . . .

Both the low flames and the fast broiling flames of the new Wedgewood burner are controlled automatically by the latest Grayson Oven Regulator. When turned to the low-temperature point this marvelous Grayson control automatically turns off practically half of the entire burner and reduces the remaining flames to tiny, blue cones.





JAMES GRAHAM MANUFACTURING CO.
SAN FRANCISCO • LOS ANGELES • NEWARK • PORTLAND

WEDGEWOOD
. . . The MODERN GAS RANGE

PORCELAIN ENAMEL INSTITUTE, INC.
612 NORTH MICHIGAN AVENUE • CHICAGO

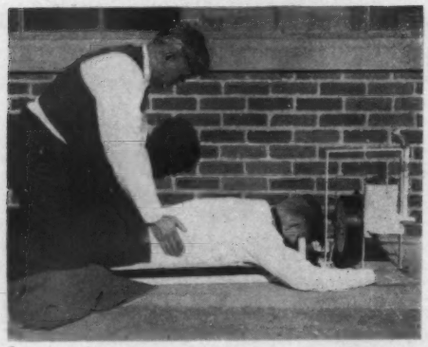
Please send me, absolutely free, a copy of your new, easy-reading, profusely illustrated sales manual on Porcelain Enamel.

Name_____

Firm_____

Address_____

Device Invented to Record Artificial Respiration Rate



A DEVICE designed to afford new and useful improvements in methods of and means for recording artificial respirations has been invented by C. I. Langdon, employee of the advertising and public relations department of the Lone Star Gas System at Dallas. The following description and accompanying illustration are furnished by courtesy of "Blue Blaze News," Lone Star house organ

One of the objects of the invention is to provide means for visibly recording respirations as applied to a subject or patient, whereby the person applying such respirations is advised at all times of the results obtained. The device is particularly adapted for use with the Shaefer method of artificial respiration.

The invention records the number of respirations over a given period, the pressure applied to the body, and the amount of air taken in and expelled at each respiration. Results of the work being visible, the apparatus may be adapted for use in instruction as well as in actual cases where persons are overcome through various causes.

The device has been enthusiastically received by experienced first aiders. They point out that it offers a definite advantage in the teaching field, as well as in the actual application of artificial respiration.

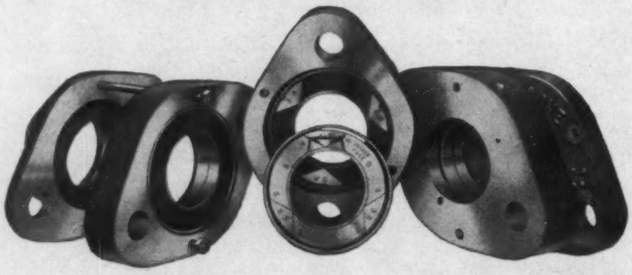
Mr. Langdon recently completed a first aid institute conducted by the American Red Cross in Dallas and has qualified as lay instructor to conduct standard first aid courses among employees of the Lone Star System.

P. G. and E.'s "Farewell FHA" Drive Proving Success

Preliminary estimates on Pacific Gas and Electric Co.'s "Farewell F H A" campaign indicate that the $1,000,000 a month quota for appliance sales would be reached, or even exceeded, before the end of the campaign on March 31.

Two major banks alone, operating throughout P. G. and E. territory, arranged financing of more than $1,000,000 worth of home appliances during the last month.

Texacone Metallic Packing For Compressors



The rings and cages, shown above, are so arranged that the inner rings lift from the rods on rise of pressure to reduce the pressure, yet when the compressor is idle they are so built that the joints are practically sealed tight. Orices are provided for high pressures to by-pass the pressure around the ring pairs, thereby distributing the friction and causing each pair of rings to take its share of the load. Texacone Metallic Packing is particularly useful with natural gas and heavy vapors, and may be made resistant to sulphur or other chemicals.

THE TEXACONE COMPANY
INCORPORATED IN TEXAS
MANUFACTURERS OF
High Pressure Packing
and Specialties

Write for Technical Bulletin No. 390

2007-9 W. Commerce DALLAS, TEXAS P. O. Box 4186
Pacific Coast Address: 923 E. Third St., Los Angeles, California
Eastern Address: 5427 Grand River Avenue, Detroit, Michigan

Bush and Martin Added to Pittsburgh Equitable Sales Staff

PITTSBURGH Equitable Meter Co. and its subsidiary, Merco Nordstrom Valve Co., Pittsburgh, Pa., announce the appointment of Roy R. Bush and Earl P. Martin to their sales staff.

Mr. Bush received his early training in the field with the Page Interests at Sand

ROY R. BUSH

EARL P. MARTIN

Springs, Okla., followed by employment with Sprague & Neely at Borger, Texas. He had extensive production, pipe line and warehouse experience with the Independnt Oil & Gas Co. at Earlsboro, Okla., the Oklahoma Natural Gas Corp. at Tulsa, and with the Texas Pipe Line Co.

Mr. Martin's first employment was with the Foxboro Co. with whom he spent four years at Tulsa and one year at Houston, in the capacity of sales engineer. For the next three years Mr. Martin was in charge of the construction and maintenance of the city gate measurement station at Butte, Mont., for the Phoenix Utility Co. and the Montana Power Gas Co.

Both Mr. Bush and Mr. Martin will work out of the Tulsa office of the meter and valve company.

Western United Employee Prospects Reach Peak in 1935

The employee prospect plan of Western United Gas Co., Aurora, Ill., netted 24,040 prospects in 1935, representing an increase over the previous year of 55.1 per cent, and establishing it as the peak year of the eight that the plan has been in operation.

Gas refrigeration showed an increase in sales of 42.6 per cent for the year. Gas water heating sales increased 396 per cent, the largest increase of any of the major appliances.

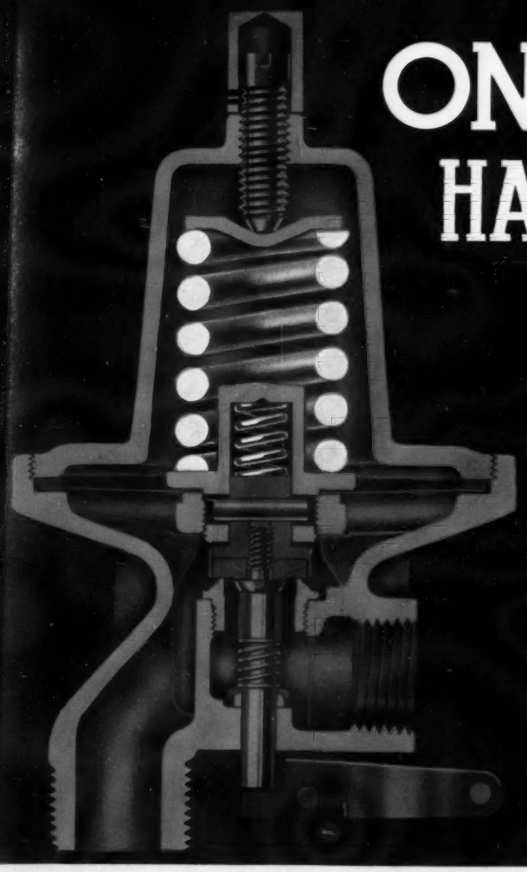
Lansing Rejects Municipal System Bonds

A proposal to issue bonds for $4,400,000 to erect a municipally owned gas system in the city of Lansing, Mich., was defeated at the polls on February 25. The bond issue received 2,710 affirmative votes and 2,405 negative votes. City requirements in the case of a municipal bond issue call for a 3/5 majority.

Herman Joins Detroit-Michigan

Clarence A. Herman, American Gas Association Laboratories engineer, recently joined the staff of the Detroit-Michigan Stove Co., as development engineer. Mr. Herman had been associated with the Laboratories for six years as both testing and research engineer.

ONLY *MUELLER* VALVES HAVE THE AUXILIARY SPRING

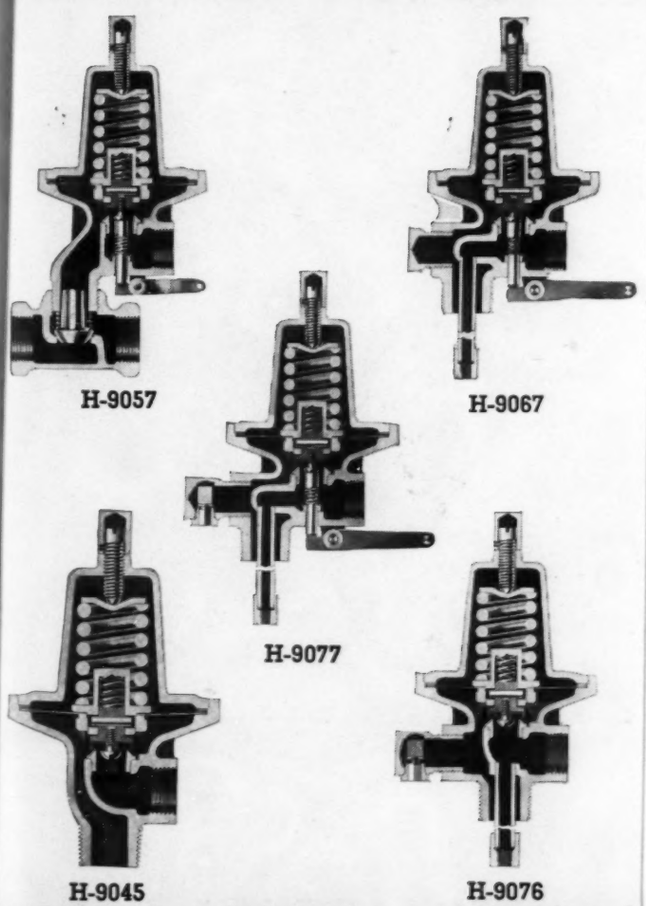


Judged by any standard, there is simply no comparison between the MUELLER line of valves and any other valve on the market. For instance, all MUELLER valves have the new auxiliary spring construction. This principle runs through the entire line of valves and is exclusive with MUELLER. Valves equipped with this feature are more sensitive—within 5% of the pressure at which they are set. A lightly seated composition disc is used which will far outlast the ordinary common hard disc that is seated by the load of the heavy main spring. This revolutionary principle insures a perfect seat under all conditions and eliminates the need of constant servicing to stop dripping and leaking.

Then look at the large diaphragms—another feature in all MUELLER valves. These extra large sized diaphragms are made of phosphor bronze and monel metal, impervious to water heat, lime and scale. All pressures operate over the entire surface of the diaphragm, thus insuring accurate sensitive control instead of relying upon a mere Pop Seated Valve.

The bodies of all MUELLER valves are made of the heavy type MUELLER bronze and brass. All wearing parts are easily accessible allowing easy replacement of worn discs and seats. All passages are large stream-lined openings and relieve pressure quickly.

Check MUELLER valves against all others. There is simply no comparison, and since relief valves are protective devices, there is no need to compromise with anything but the best.



MUELLER CO., Decatur, Ill.

Factories: Decatur, Ill., Los Angeles, Calif., Chattanooga, Tenn., Sarnia, Ont.
Branches: New York and San Francisco

Mueller Valves are furnished for all types of installations. Write today for this interesting catalog describing the entire line in detail.

MUELLER

PRESSURE AND TEMPERATURE RELIEF VALVES

How simple! Common labor and a single tool are all that's needed to install the mechanical joints made by members of this Association. Rigid tests by the A. G. A. laboratory have proved them gas-tight under all working pressures.

These improved stuffing-box type joints "step up" the service of a material unequalled for long life. Look at this gallant old cast iron main, installed more than 100 years ago in Baltimore. Cast iron pipe—bell and spigot, plain end or flanged—is available in 1¼ to 84 inches diameter.

CAST IRON PIPE

THE STANDARD MATERIAL FOR DISTRIBUTION MAINS

The Cast Iron Pipe Research Ass'n, Thos. F. Wolfe, Research Engineer, 1015 Peoples Gas Bldg., Chicago